

Dr Mike McInerney

Computer, Shakuhachi, Pen: An artist's tools

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First of all, I would like to say thank you to Eduardo for this opportunity. I have just done the viva on my Composition PhD, and in a way I am taking this as an opportunity to sum up where my work stands at this point, with lots of musical and practical examples, so I think a sort of biographical note will not go amiss. I began composing music – that's tadpoles and tramlines, lines and dots – not long after I started piano lessons as a small child so I suppose there's always been a fascination for me with the whole practice of *writing* music. I guess I've reached a point where I've decided that the, not necessarily the 'drawback', just a necessary fact with any writing music is that it teaches us just as much about writing as it teaches us about music. This is why my title refers to this concept of the pen. I think that a great deal of what we hear when music is composed tells us about the kind of inscribing activities for which writing is responsible. I suppose I'm taking my thought heritage here a lot from Jacques Derrida in the idea that writing is a particular mode of analysing material which necessarily colours the kind of assessments it can make of things. All of this I hope I can demonstrate in a musical sense as we proceed.

Other cases appealed to me when I began composing – above all noise, and sound as an endlessly fascinating phenomenon, started me wondering. Then when I was in my teens, in London to hear a Stockhausen premiere, one thing I came away with was this [slide: Anestis Logothetis, *Agglomeration* (1961)]. I was in the old Universal Edition bookshop in Wardour Street and they had a pile of these at 10p a shot. That's all I got: no instructions, no explanations, just pages and pages of these fascinating scores which kind of sat with me. I had no idea why they haunted me so, nor that they would end up being the key to my solution to the problem of writing as it affects a composer. As I say, I hope I can explain as we go along.

It's a work by Anestis Logothetis, the profoundly neglected Austrian composer, whose family I have come to know, because they are delighted that somebody has come along who seems to agree with Uncle Anestis, as it were, that this really is a solution to a deep intractable problem in the practice of writing as a procedure that goes before a musical work. I suppose that the defence of what I am going to say is that I am an artist so I can make up stories that are not really entirely reasonable. I'm going to play you a piece of music and I hope that you will bear with me now as I tell you my myth about what music does to us. [Brief extract from 3rd Brandenburg Concerto] This is Bach. The English electro-acoustic composer, Trevor Wishart, has this great phrase that he uses in his writings about electronic composition, which is the 'pitch-time lattice paradigm'. Trevor reckons that our notational system, of which this is an excellent example, reduces music to a lattice of pitches and times; it's almost like a coordinate space, where you can say 'that pitch',

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'that time', that duration', 'that frequency', and it can be reduced to three or four very simple atomic coordinates. To me, that's part of the problem we have with writing music.

Writing by its nature inscribes things in this atomic fashion. There is an American philosopher called Nelson Goodman who helps to clarify my thinking about this. He talks about score-making being the necessary creating of what he calls a 'symbol set', where each symbol has got to be distinct from its neighbours, so if you look at a page of something written in those symbols, you have to be able to look at each symbol and say 'ah yes, that's A flat', 'that's F', 'that's the high G sharp' so that you can, no matter how badly written, decide what each symbol is and name it. Moreover, this set of symbols has got to refer to a field of entities which have the same properties; that is, within that field, you know which sign refers to which sound and vice-versa, the sound has only one sign referring to it. It's a kind of closure of our sonic experience. It is almost necessitated by the process of articulated writing.

I am going to place you a piece of mine. It's seven minutes. As you may know Bach's music, but you don't know mine, we'll just listen for seven minutes then I will talk about this piece and the procedures behind it.

[Analogorak: *Session 8/3*]

This wasn't created purely out of an interest in electronic sound so much as my own curiosity, to try and find a music that stood for the other paradigm. If writing has this atomic quality, how can I make a music that isn't atomised? One can try to do this with instrumental musicians, but I will talk later about the history of the way we have developed our instruments and my misgivings about that also. I ended up using mostly analogue sound equipment because of that wonderful thing that because of those subtle nuances you can make these great long revolving sound continua. One of the musicians I worked with making that said, 'you know, we should write some music for this' and I have always said to him 'if you can work how to make a score that will represent that kind of activity, then go ahead and do it'. It may be possible, but I would argue it goes against the nature of writing to produce music with such attention to detail in sound.

[Question – Did you write down ... Answer – No, basically we improvised. We improvised every Monday for about six months in a pub, me and two other electronic musicians.]

I'm always wary of talking about improvisation because it is potentially one of the most banal art forms in music, but it's a useful method sometimes for making stuff that lies beyond the writing paradigm.

[Question – Sure, but you would have developed symbolic representation of your improvisational procedures; how do you know that they are not going to have similar limitations to the writing process?] It's true, I don't. Again I guess with Derrida, I'm not sure that we can actually genuinely escape from the processes of writing, they are so deeply ingrained in our

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thoughts. But I think at least one can point to the other and say, well it's probably over in that direction somewhere. I mean, if nothing else, once you've heard an hour of that stuff it's surprising how like it the next hour of it is. So there is clearly some sense in which we found a sound world; we may be able to rotate it but something is clearly prescribed in our habits, our procedures, our choice of instruments and that fact that it was always me, Michael, and Neil, because we knew we would produce something that satisfied all of us and we wouldn't end up arguing and saying 'it wasn't supposed to be like that'; only once, anyway, and then we stopped.

So I guess, when I compose, because I still do make scores, I am no longer so interested in what you might call prescribing the musical event. I am more interested in the idea of composing as a way of articulating the musical activity. I have come to the assumption that it's more interesting to leave the material up to the generative processes of performance and instead try to articulate whatever that material is. I will now try and show you some of the scores I have worked on lately in an attempt to make some sense of that.

[slide: page from *Interfaces* (2001)]

This is a page of notation, which indicates a combination of factors. It is a part for one musician – this is indicating the musician to whom they are at present accountable, and this is the particular kind of relationship between textures. The whole notation carries on in this manner, so you see these different modes of interaction and these different interactive partners running throughout the score. So what you'll hear, I haven't fixed sounds except in the sense that I have chosen the musicians. What is audible is the set patterns of imitation, support, contradiction between all the parts.

[Extract from *CardWeb* (2001)]

I suppose I'm not interested in improvisation as a mystical musical activity but as a way to make material which the composer can then articulate. [Question: So those musicians play based on what they heard other musicians play? A. Exactly, the piece, it's called *Web*. Q. So basically depending on what the musician does, another musician does something and based on what that musician does, and you get a complex set of interacting... A. Precisely. Q. It's like the artificial life. A. Yes, it's very like the artificial life stuff you have been doing which is quite bizarre – the analogies that this thinking is parallel with.]

The difference was that we found the best way to make good pieces from this was that each one would end up with a string of interplays where you would go 'oh, someone was doing that, ok...' and then we'd rehearse until a form had evolved between us so that in the first rehearsal I'd go 'ah, when I'm doing that and you're doing that, that's a nice bit' and then it would just kind of coalesce and become a musical form that has got the same patterns of interplay. Each musician had a string of instructions but by repeated playing the way these strings were interlocked became fixed into a kind of fixed musical identity, even though often the content might be completely different in terms of melodic line or pitch series, the actual contours and the patterns

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of interplay between the lines became a coalescent identity, which is kind of nice. I have two recordings of that piece which are very different in various facets of the sonic content but actually you can hear the same patterns of interaction between players.

[slide: Feldman, *Projection I* (1959)]

This is Morton Feldman's *Projection I*, where he restricts the world of sounds to an absolute minimum. As you can see, there's a flute, trumpet, violin, cello, piano. They are given effectively three potential pitch locations: an upper pitch location, a middle one and a lower one. Then the instructions simply tell you – well there are various details actually, real details of sound colour: pizzicatos, arco, harmonics, number of notes in a chord and the number of notes in a silent chord sustained on the piano. There are details as to the mode of articulation, the density of the sound, but no details as to pitch. So you get this glorious effect of just sounds suspended in time.

[*Projection I*]

It all boils down to the pen. The problem is what you choose to mark. I wasn't happy with Feldman. I mean, it's a beautiful piece; don't get me wrong. So I came up with this [slides: *Solo* and *Duo I*, from *Placing Studies* (2003)]. What interested me was that even with instrumental sound there are always details that the composer has to leave out. What I thought was interesting in a world so restrained as what we heard there, was the modes for entry and exit to the sound because, you know, the difference between a sound with a sharp attack, as opposed to one that comes in gently: there's a huge difference that is easy to overlook in notational practice. And the difference between two players coming in like that [indicates a completely simultaneous attack in *Duo*] and coming like they do most of the time: it's certainly audible but it takes a pen, as it were, to make that a central process. I realized working on this piece with the Barton Workshop that in order to – when two players come in really together, sound together, they have to agree to their mode of articulation. I can't say it was a great success: we only had a couple of days rehearsal, but I can play you a fragment from *Placing Studies*.

This was a solo played by Jim Fulkerson, the trombonist, who at least took to heart the instruction that modes of attack and release are quite crucial, even in instrumental sound.

[*Solo*, from *Placing Studies*]

Ok, going back to my little rant, my introductory misgivings about writing: one of the other things that happened to me at a formative stage in my life is hearing this music, indeed by this musician. This is Yoshikazu Iwamoto playing the shakuhachi [Hon Kyoku, *Shishi*]. I have this story; those of you who saw me at the New Music Festival a couple of weeks ago will know that my researches indicate that in the 17th Century Lully threw the woodwind instruments out of the court orchestra because of the unevenness of their timbres, the sounds, and instrument builders such as Hotteterre developed the kind of woodwind instruments that we have today, with all the

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keys, which give a reasonable equality of timbre but they are indifferent to pitch, so Ab and A have more or less the same timbre; it's a degree of control. It means those great things – the tricks of modulation, and also the blending of instruments – are feasible on these instruments.

At the same time the Japanese were developing this, the shakuhachi, and as such adopted the opposite paradigm. If you listen to the court music of the Edo period, of which the shakuhachi is one of the primary players, along with the koto and the shamisen, what you will hear is a fascinating kind of heterophony, that is, a single melodic line on three instruments. What makes it fascinating is that the differences in articulation between the three instruments are the point of the music. So all these phrases acquire by tradition different modes of articulation. What you don't hear is a single line like we hear in Irish folk music where all the instruments are blending. You get a music where the difference in articulation between three instruments playing the same tune becomes a key part of the aesthetic, a music of wonderful continuous shifting of timbres. And this is so innate in the shakuhachi.

[Q. So the koto and the shakuhachi use the same type of material, and explore different types of articulation?]

Precisely. So they are given the same one line of melody but they explore different articulations throughout. In a way what has happened is that the instruments have been developed to increase that capacity. In the case of the biwa, the sign of a good biwa, a good biwa player, is the sawari, the rattle, the amount of noise that comes around the bridge. The strings, which have been made of silk, and the height of the bridge, which is quite large, mean that how you play the string, the modes of vibrato and so on, is fixed with the notes and there's a huge range because of this very flexible arrangement of silk string and huge bridges. The Japanese have built an instrumentarium of instruments that celebrate the differences in timbre, as opposed to our heritage, which during the same period developed a tradition of evenness of timbre.

So for instance you can get a really some really beautiful clear timbres on the shakuhachi, but that is by no means standard. *U*, which is a form of *Chi no Meri*, a kind of Ab sound, is always a very woody and frothy sound. You can't get it on any other note, so you can't transpose the music. If you want that sound, it has to be on that particular pitch. And because of the nature of the bore, it is not so easy to come straight in as it is with our instruments. There is a very wide bore on a shakuhachi and for reasons that I don't understand it means that to just come in is not so easy, so each note has a kick in. Of course that means that one has several starts per note, and these can all be written in to the notation. So there is not a great degree of detail; the notation just runs down and tells you which of the five pentatonic holes you are uncovering. Around that notation, however, there are all these additional details as to how you bring it in, where it is shaped (where it wobbles), a huge capacity for pitch bend and various kinds of vibrato, not diaphragm vibrato but actual physical vibrato, and also the ability to fade [demonstration]. What you heard there is a standard ending in the shakuhachi repertoire, just before the note ends, a little shake of the head; exquisite.

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So hearing this made me realise that here is an instrumental tradition that comes closer to my need to have a real palette of timbre as well as a palette of pitches. As you can imagine it's quite restrictive; if you wrote sophisticated, many-note, atonal music for the shakuhachi, I'd be hard pushed to play it because of course the way to get many of the notes is by pitch bend and head movements so there is a limit to how quickly I can do that, but what you get instead is this wonderful range of nuances in pitch. There are particular ornaments: this one for instance is a great trill [demonstration]. You can only get it there, it's only on those two pitches; it's a standard part of hon kyoko repertoire; or *mura ike* breath, which is a particular kind of attack [demonstration].

One of the things I was doing a couple of weeks ago was extending this soundworld and its technique through the use of computer technology, using a range of accelerometers and pressure pads devised by my colleague Zlatko Baracska. However, I would like to return to the point I started with – that marvellous score by Anestis Logothetis. Remember I was talking about this problem of representing sound and that the pitch-time lattice paradigm is a restricting device. If you look at earlier scores of Logothetis than this one, *Agglomeration*, you find around the perimeter a very tight sound-time grid so there are very specific details. What Logothetis says in his writings is that he's trying to find a way to fix *sounds*. Now this is interesting because we are talking about the 60's and 70's here: he was writing primarily for orchestral players, but what he was trying to do was to find a way of controlling sound. Two things happen as his work develops: the images became, as it were, progressively more outrageous and dense and also really quite susceptible to a plurality of readings.

[slide: *Enklaven* (1966)]

This is a piece I realised last year with the aid of three other sound artists, called *Enklaven*. You can see those lines running horizontally across. There's a set of thirty-two coming from the right and thirty-three from the left. You can see inside them all these nuances, all these figures, all these wobbles and laid over them, the five *enclaves*, which are figures from a different range.

His idea was that somehow one could get an ensemble of at least sixty-five musicians just to produce this background sound onto which these five layers were imposed. Unsurprisingly at the time, realisations of *Enklaven* are abysmal and that's where my love of the computer comes in. In a way I ended up turning back to technology more because it solves practical problems for me as a composer and maker of work than any innate fascination with machinery. I looked at this score and decided that it would indeed be great if I could have a choir who could sing a thirty-two note chromatic chord for twenty minutes but that's very hard to do and I certainly couldn't afford it, but pro-tools can do it. So I contacted a friend, a singer called Lisa Colledge, took her into a studio and said to her "I want you to sing every pitch in the chromatic scale from the bottom of your range to the top to every vowel and when I've got my compiled set of two hundred vowels sounds I'm going to spend, two years it turned out, with pro tools and I'm going to make a choir of thirty-two Lisas singing for twenty minutes and I'm going to put in every

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single pitch bend and every single shape of sound, which you do not hear in the original recordings. And then when that's done I'm going to build an electronic organ sound to map in the same way the final thirty-three-note chord. On top of that I'm going to impose five enclaves of sound."

The thing that I'm proud of, in a slightly anally retentive sort of way I suppose, is that every move of Logothetis' pen was audible in our performance of *Enklaven* because in the end to make it valid as a performance we (that's myself and the artists Neil Dowell, Richard Douglas-Green and Michael Neil) used the tabletop guitar to do this one [indicates a part of the score]; so Neil moved down his strings over a thirteen-minute period, gradually descending in pitch. I'll show you these enclaves in more detail: here's the tabletop guitar part [slide: first enclave from the score]. This is the piano part [second enclave], so these are all pre-determined pitch clusters of various kinds and there's some very clever pedalling.

This [third slide] was done by Michael Neil with sound projection so the great sounds you might hear swirling around between eight minutes and sixteen minutes eighteen seconds are his. This [slide 4, Richard Douglas-Green] is synthetic white noise combined with this great trick which is – if you get a bat detector, what a bat detector is supposed to do is to take the high frequencies of bats and transpose them into the audible range, and it turns out that every bat has a slightly different frequency range, so you can set your little meter to 'Pipistrelle', take that frequency range and translate it into the audible. The great thing is that if you put anything else in front of it, it will do the same thing. So I crinkled some bubble wrap, which is full of very high frequencies we never hear, and transposed them down to what I consider an 'evil hissing sound'. I'll just give you a taste of *Enklaven* by Anestis Logothetis.

[*Enklaven*]

I suppose you could say I've found in these scores a way to solve my problem of how to articulate sound through notation, and that is to adopt a different approach to notation and sound. I'm not sure Logothetis would necessarily recognise that as his piece *Enklaven*, though we were utterly faithful to his score and, talking to his colleagues, this is perfectly par for the course: he began to realise that once you slip outside Goodmanian symbol systems such as I described earlier there really isn't a way, or there doesn't seem to be a way, that you can prescribe sound with the same clarity as you can describe the pitch lattice. So what instead you have is a kind of hermeneutic activity where the performers go to the score and resolve the score as faithfully as possible, but in a way that resolution is as much a creative act as an interpretive one.

I'd like to finish with a poem by Robert Graves. I suppose it feeds on the question *why* anything like this. What is my dissatisfaction with the pitch-time lattice in the first place? It has given us so much music. But ...

In Broken Images

Robert Graves 1929

He is quick, thinking in clear images,
I am slow, thinking in broken images,
He becomes dull, trusting to his clear images,
I become sharp, mistrusting my broken images.

Trusting his images, he assumes their relevance,
Mistrusting my images, I question their relevance,
Assuming their relevance, he assumes the fact,
Questioning their relevance, I question the fact.

When the fact fails him, he questions his senses,
When the fact fails me, I approve my senses,
He continues quick and dull in his clear images,
I continue slow and sharp in my broken images.

He in a new confusion of his understanding,
I in a new understanding of my confusion.