Jonathan Impett

"Being Itself: Improvised Electronic Music as Simulation, Interface and Shadow-Maker"

EMS08

Being Itself: Improvised Electronic Music as Simulation, Interface and Shadow-Maker

Jonathan Impett
School of Music, University of East Anglia
j.impett@uea.ac.uk

Introduction

The paradigm of research allows us to approach a common discourse at gatherings such as this conference. The effects of the music-making energy that motivates us appear on a continuum from pure sound to abstract questions. Each musical decision produces at least dozen such lines of enquiry, and one reason we gather together is that our particular means of production brings to the surface technical questions that demand technical answers. In this paper I shall look at some technical issues – musical, aesthetic, computational – but my real point is broader and more presumptuous. The various practices of improvising with technology have grown up defining themselves against existing cultural structures; they are not the production of scores, they are not jazz, they challenge mechanical reproduction, take their electroacoustic care over every sample and are then willing to do violence to it should musical truth demand, they argue with ownership, they even try to escape from music into other media or modes of performance at every opportunity. The real badge is of course to have a piece of custom performance kit – generally unreproduced if not unreproducible (a generalisation, but the image is not uncommon). The main point is that the mode of performance tends not to afford participation in a particular practice; it is overtly individualised. I caricature, but there is a degree of self-caricaturing in the practice. I hope to show that rather than being in any way alternative, such a mode of music-making represents a central paradigm of musical activity and understanding. This paper will therefore suggest:

- That the interactive improvised work might be acknowledged as a central cultural paradigm – but to do that we need to understand what *kind* of thing it might be;
- That to do that we need to sophisticate our understanding of how such activity is distributed through time and space;
- That in particular we need to see where knowledge arises and how we recognise it;
- That because technology requires us to be explicit, we need to consider the mechanisms for *self*-knowledge.

Definitions

What music is at issue here? Lets start by spreading the net too wide: *technological* not as in plugged-in, amplified or processed but as in a sound surface made possible by technology – and it is only just too far to think of the phonographic listening of Mahler or the additive orchestration of Ravel. Here we're talking about technology that transforms time and memory, causality, the scope of physical and imaginative intentionality. *Improvised* not as in the arbitrary, the mechanistic or the therapeutic – but in the meaningful determining of the direction of a musical argument during performance. *Interactive* is the not unproblematic term often used. What kind of work are we dealing with? These questions relate to properties common to all musical 'texts', from Guido to Miles or Karlheinz: the mode, locus and moment of inscription. What modes of inscription are

proper to our historical situation? (Score-following, for example, may well turn out to be a non-problem of transition.) How then can we characterise works that characterise themselves by their lack of definition on one hand and individuality on the other?

Models for the work – locus and moment

> *Works for performance can be 'thick' or 'thin' in their constitutive properties. If it is thick, the work's determinative properties are comparatively few in number and most of the qualities of a performance are aspects of the performer's interpretation, not of the work as such. The thinner they are, the thinner is the performer to control aspects of the performance. ... if the work is thick, a great many of the properties heard in a performance are crucial to its identity and must be reproduced in a fully faithful rendition of the work. The thicker the work, the more the composer controls the sonic detail of its accurate instances.* (Davies 2001, 20)

Now of course deriving a default model of composition from the status of the nineteenth century score is like understanding architecture on the basis of the pyramids. Tape music offered an alternative pyramid, one that can be erected by one man – an inflatable. But to extend a human-geographical metaphor they cast a long shadow, and it may be us, the peasants trying to work out a means for survival in the noisy musical third world suburbs that can offer an alternative – but to be culturally useful it needs to understand itself better.

Recently working on a survey chapter on the psychology of composition I continuously assumed I was missing something – in fact there's precious little of relevance. Sloboda (1985, 118) proposes a model of the process which has validity but looks something like an optimisation algorithm for the solution of a creative problem using available technical means. What is interesting is the way it passes in and out of consciousness. We might define this process thus:
Composition is a reflexive, iterative process of inscription. The work, once identified as such and externalisable to some degree, passes circularly between inner and outer states. It passes through internal and external representations – mostly partial or compressed, some projected in mental rather than physical space, not all necessary conscious or observable – and phenomenological experience real or imagined. At each state-change it is re-mediated by the composer, whose decision-making process is conditioned by the full complexity of their experience. (Impett 2009, 410)

Mechanisms of representation, modelling and prediction necessarily intervene, even in a limit case such as the improvisation of Derek Bailey where they constitute massively parallel filters for *non-identity*. Zbidowski (2002) explains the production of musical percepts from multimodal complexes of such processes in terms of conceptual integration networks. The dynamical, contingent and individual nature of musical experience is such that these networks are constantly reconfigured in context; still more so in the act of production. This constant re-mapping is what gives music its slipperiness, its strength. There is no absolute defining, no satisfactory representation, but a constant deferring. This is the creative spiral that continues in the listener. And this deferral is what the interactive work attempts to embody. Sarath (1996) suggests a taxonomy of musical times based on a more narrowly defined, conventional set of activities - moment-to-moment improvisation, "extemporised composition", and composition - but these are examined in a wider range of contexts. From this framework he develops a theory of times which permits a more phenomenological approach to the understanding of a particular event. Improvisation and composition are polarised as inner-directed and expanding conceptions, spontaneous and discontinuous processes. To these he adds a "retensive-protensive temporality" (derived from Husserl 1964) in which awareness is projected both backwards and forwards in time from a moving present. In other words, the moment under the spotlight either of consciousness or of some computational analysis or prognosis may not be the present of clock-time, and the defining or

understanding of that moment itself reconfigures all others. Returning to our initial topic of the technological determining of production, the question here concerns the *locus* of decision-making – when are structuring decisions made and what factors do they bring together?

Being there

50 years ago, Ligeti spoke about the identity of form and material and the plasticity of form, using spatial analogies and the idea of multiple views derived from Calder's mobiles. He likened individual works to knots in a tapestry of works, derived and projected ideas – memes, we would call them now. But it is more like a web – think of Waisvisz's. The act of tying each knot changes the tensions or threads available to others, and they're all a little slippery. What we're doing in the case of these hybrid, interactive, contingent works is composing a set of knots which will constrain, inform or determine the ways in which other are to be tied in the act of performance. This sounds dauntingly complex, but we can paraphrase Simon: *Music, viewed as a behaving system, is quite simple. The apparent complexity of its behavior over time is largely a reflection of the complexity of the environment in which it finds itself.* (Simon 1996, 52) (A passing axiom for style-simulators: if this is true, then what *sounds* the same cannot *be* the same.)

So the question becomes how we can get the music to *find itself in an environment*. Eectroacoustic theorists like to locate their objects in spatial relationships. We could characterise individual works – interactive, improvised, call them what you will – by distribution maps of the time, place and situatedness of the decisions they embody. These decisions may require *present* knowledge. We might describe characterise modes of distributedness in two dimensions: physical / technological / environmental / cultural, and temporal.

In the same place, Simon suggests that the natural status of the digital artefact was the *interface*. The technical implementation of the interactive work is thus an interface between imagined spaces and present reality, present behaviour. We are therefore dealing not with the indeterminate but with the complexly, dynamically determinate. Only in performance can it be known, be true.

True? Can we define these truth events? Recognise them, at least? We are, after all, dealing with a technology that has far less musical intuition than a drum. Badiou (2001) would of course like us to be able to refine our understanding of truth events to a formal system – but whereas science, politics and love may be irreducible, it may be that we need a sub-category within art for music. Can we imagine such a formal system? Perhaps it becomes more tractable if we downgrade truth to knowledge.

Knowledge, emergence and dimensionality

Let us consider knowledge as related to Lyotard's understanding of the *event* – a phenomenon which changes the nature of the space within which it happens, at least to a particular perception. Such an event is to be heard shortly after the opening of the first track of Furt's album *Angel*, and another in the tape part of Nono's *La lontananza* (at 19'28" – 19'40" in the recording by Gidon Kremer). What happens in both cases is that a moment of structural significance is preceded by an event from outside the established coherent discourse (I choose these examples because their coherence is actually of rather an old-fashioned nature, and hence we can probably agree). What happens in both cases is that a moment of structural significance is preceded by an event from outside the established coherent discourse (I choose these examples because their musical coherence is actually of rather an old-fashioned nature, and hence we can probably agree). They work differently. In Furt, the new sound is absolutely from outside their established sound world, it is referential to something quite impossible given the technology of production - a cymbal. In Nono's case, he steps back with the camera to show us the actual context, the reality – a sound from

the studio, an unannounced, momentary and hence irresistibly referential image of the moment of production of the source material.

In both cases, the change is signalled by a change of *dimensionality*, a phenomenon often related to that of emergence. This is a valued aspect of Western musical experience: for example in Bach (a conventional ornament becomes a countermelody of quite different extension at the centre of attention) in a Mozart codetta (the friction of imagination against structure and balance), or in Beethoven (after the two state bifurcated scherzo of the ninth symphony, the same self-reforming energy has to change dimensionality, change discourse at each explosion of complexity in the last movement). This adding or changing of dimensions I would suggest as a candidate for knowledge events – they transform our understanding and our *expectation*. Lyotard (1991, 48) and Perniola (2004, 27) refer to *anamnesis*, the remembering of what was not known to be known. An algorithm simply mapped onto sound – however prettily it behaves – cannot therefore generate musical knowledge. Its dimensionality cannot self-transform, cannot change except arbitrarily.

Many interactive systems embody some form of predictive mechanism. Modelling a reality and then intervening in that reality is a vital characteristic of new technologies. My work for wind quintet and computers (*Wind*, 2004) is an attempt at an implementation of such a mechanism, developed in the *Swarm* complex systems simulation environment. A set of redescribing agents is used in developing the material on the basis of very simple improvisation, and then in directing machine improvisation as they re-mediate their own material in the reality of a particular performance.

I would like to suggest that a mechanism for *self*-assessment, for evaluation of the evolution of the whole, is important. This necessitates an additional layer of structure, a layer *outside* the behaviour being observed. The degree and nature of integration between these formal components is a crucial characteristic of interactive works. Various forms of emergence have been proposed, for example interactive emergence (Hendriks-Jansen), syntactic emergence (Cariani), indices of emergence (Crutchfield), or as function of *representational redescription* (Karmiloff-Smith). *Re-description* recalls the earlier discussion of the processes of musical creativity. The imperative then becomes to recognise the describer (it can't actually be a homunculus), because in these terms emergence – knowledge – is a product of arriving at the *limits* of a description. Redescription becomes the only way forwards, spurred on by the continuous cycle of deferral. This is entirely consonant with the status of music as a cultural object and with the human activity of music:

> *Underlying all these considerations is the ultimate difficulty of the nature of the organism; if we are to effectively account for the autonomous 'quasi' causality of the higher levels, it should be a minimally retroactive causality, a self-relating causality ... the act of "positing the presuppositions." ... The solution lies precisely in the noncompleteness of physical causality.* (Zizek 2006, 114)

Conclusion – the interactive work as a shadow-maker

We can now return to the question of the nature of this kind of work – this work that has to be instantiated in its own reality (we don't have fully transferable cultural realities that are true, or at least we can no longer pretend that we do). Mario Perniola looks at two commonplace contemporary understandings of the artwork: the work as unique, as standing for itself, and the work as a nexus of communication, complexified in a media-driven culture. Pursuing his argument that communication is not a useful way of understanding art, he suggests that the work can be characterised by the shadow it casts backwards and forwards though culture. A shadow, because its knowledge is not entirely knowable. The music under discussion here is a third form of art, known not by compromises but through a series of what Perniola calls 'arrangements' – non-dialectical, contingent relationships.

...the shadow does not place itself as an adversary, but, if anything, as the keeper of a knowledge and a feeling which it alone can reach, only to disappear when the full light wants to appropriate it. It implies a deeper experience of conflict than what the institutions and communication can achieve and that is why it believes inevitable the establishment of compromise formations. That is why it does not agree with the idealization of conflict and victory implicit in the dialectic. For the shadow, winning is impossible and to think of winning is naïve. (Perniola 2004, xix)

Until it is realised in performane, the interactive work is itself a shadow; finally we can give up the inherited, unhelpful notion that the musical art-work might 'win', might impose itself fully-fledged. But I would like to suggest that it is also a *shadow-maker*. It draws together truths, decisions, actions from other times or places, and projects new ones into the future – and in doing so ideally casts light on the present. In this, I would argue, it provides a useful model for our contemporary understanding of musical activity in general.

I should have liked to end with one last example – Nono's last piccolo piece, *Baab-arr*. It is enabled by technology – by a decade working with Haller's studio – but transcends it, discards it in its physicality. It is enabled by the process of compositional inscription and reinscription – but so contextual are its truths that they could not be fixed without reference to every parameter of its context and performance. But it is deemed by committee not to exist because it serves nobody's interest that it should. The consummate shadow-maker, different in every reality and now different in every memory.

References

Badiou, A (2001). Ethics: An Essay on the Understanding of Evil (trans. P. Hallward). London: Verso.

Cariani, P (1991). Emergence and Artificial Life. In C.Langton, C. Taylor, J. Farmer and S. Rasmussen.
 (Eds.) *Artificial Life II*. Reading MA: Addison Wesley/ Santa Fe Institute.

Crutchfield, James 1994. The calculi of emergence: computation, dynamics and induction. *Physica D* 75: 11-54.

Davies S (2001). *Musical Works and Performances*. Oxford University Press, Oxford.

Hendriks-Jansen, H (1996). *Catching Ourselves in the Act*. Cambridge MA: MIT Press.

Husserl, E (1964). *The Phenomenology of Internal Time Consciousness*. Trans. J. Churchill. Bloomington: Indiana University Press.

Impett, J (2009). Making a mark: the psychology of composition. In *The Oxford Handbook of Music Psychology* (ed. S.Hallam, I. Cross, M.Thaut) 403-412. Oxford: Oxford University Press.

Karmiloff-Smith, A (1992). *Beyond Modularity: a Developmental Perspective on Cognitive Science*. Cambridge MA: MIT Press.

Lyotard JF (1991). *The Inhuman* (trans. G. Bennington and R. Bowlby). Cambridge: Polity Press.

Perniola, M (2004). *Art and its Shadow* (trans. M. Verdicchio). London: Continuum.

Sarath E (1996). A new look at improvisation. *Journal of Music Theory* 40, 1, 1-38.

Simon, H (1996). *The Sciences of the Artificial* (Third Edition). Cambridge MA: MIT Press.

Sloboda J (1985). *The Musical Mind: The Cognitive Psychology of Music*. Oxford University Press, Oxford.

Zbikowski LM (2002). *Conceptualizing Music: Cognitive Structure, Theory and Analysis*. Oxford University Press, New York.

Žižek S (2006). The Parallax View. MIT Press, Cambridge MA.