WHAT ARE WE MAKING? THE WORK-WITHOUT-CONTENT IN LIVE COMPUTER MUSIC

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ABSTRACT
This paper explores the nature of the work in the case of computer-mediated real-time, interactive, situated or improvised music – works often defined principally in terms of uniqueness but which constitute a common practice. The context for such an understanding derives from criticism of contemporary culture, especially Alain Badiou’s call for an affirmationist art. The notion of the work without content is proposed, developed from the philosophy of Giorgio Agamben. Such works are characterised by the map of their dynamical redistribution of the materials and mechanisms whereby they inscribe a unique surface in a particular context. They must incorporate some mechanism for emergent events to transform space or discourse; modelling, simulation and the state-change of representation have crucial roles. The work without content acts as an interface between the originating impulse and a shared present. Its apparatus is understood as an economy of interactions. As a broader cultural paradigm it has implications for our understanding of music from other times and places.

1. INTRODUCTION
The space between performance, improvisation and composition is one that we navigate with technology, by computer. The making of work that is to a degree instantiacted in the context of its performance is the conventional use of the computer in art music, and explicitly or otherwise brings both performer and listener into a new relationship with that work. The composer writes themself into the act, and asks that the performer inscribe themself into the text. Whether it is classified as interactive music, improvisation with technology, real-time composition, installation or performance art, this kind of work tends to be rooted in its property of difference, in the uniqueness of its situation (performer, actions, moment, context, environment) being proper to the work in general and crucially instrumental in defining the musical surface of a certain instantiation or performance in particular. The specificity of such work – its necessary association with a custom technological set-up or a single performer – is to some extent inevitable.

Of course there is no reason to promote uniformity, and attempts to build new repertoires for short-lived or one-person technologies tend to have limited success. However, perhaps this situation – apparently a seething sea of techno-aesthetic inventiveness and ingenuity, probably rooted in a somewhat unreflected inherited modernism – also reflects or engenders a cultural resignation, a sense that any intervention can only be local and temporary. Computer music and sound art present the world with an array of new hearings, of technologically-mediated ways of engaging with sound. But perhaps as a movement, as a genre, it does not yet fulfill its cultural potential in presenting sufficient challenge to a prevailing ideology of karaoke – music that sounds like the memory of music, performance that resembles the memory of performance.

While there is an abundance of exciting work, music – for all its ubiquity – faces particular cultural challenges. Clearly, technologically-mediated music cannot single-handedly address the cultural predicament of art any more than it can remedy political cynicism. But it can and does present a mode of human musical activity that is authentic to our time and place, and if it is authentic it should have something to teach us and we should have the responsibility to understand its nature, to allow it to do its wider work. The historical role of the work concept in Western music is explored extensively by musicology [11, 12]. The intention in this paper is not to criticise current practice but to encourage reflection on the nature of the work in live computer music.

2. THE NEED FOR A RESPONSE
Alain Badiou analyses the situation thus: art has (been) polarised into two modes of activity - the institutionalised, formalised or imitative, and the individual, unique or temporary. The former assumes a certain kind of relationship with its audience, the latter acknowledges that it may have none; it risks what Badiou terms an infinite alterity. Both are therefore entirely safe, disarmed, unable to do the work of art. He suggests that the cultural-political respecting/ignoring of difference becomes a mechanism for this very disarming, and that we should look rather for commonalities, to allow a sense of the power of cultural acts to re-emerge - an affirmative aesthetics [5]. The artist has an ethical responsibility to go beyond
subjective singularity to seek *evental fidelity*, a supplement to *what is going on* available to others: “This ethics combines, then, under the imperative to ‘Keep going!’, resources of discernment (do not fall for simulacra), of courage (not give up), and of moderation (do not get carried away to the extremes of Totality)” [4, p.91]

3. WHAT ARE WE MAKING?

It behoves us, therefore, to consider the nature of this common practice more carefully; in particular, to consider kind of objects it generates.

In asking why art no longer has the power historically ascribed to it - despite or perhaps because of the democratisation of ‘taste’ - Agamben sees the challenge of creativity, the moment of confronting the blank page, as the common thread of contemporary aesthetic experience. The artist, rather than being an inexhaustible wellspring of ‘ideas’, is a *man without content* [1]. Agamben takes his term from Musil's book exploring the asphyxiating complexities of Vienna at the beginning of the twentieth century, the world of Mahler and Schoenberg. We might reinterpret music of that time in the light of our present concern. Neither Mahler nor Ives deal with content in the classical or even Brahmsian sense. We might call their practice *phonographic listening*, even in the absence of technology; they find structure and meaning in the sounds that surround their own artistic action. Schoenberg and Hauer reconstitute the relationship between the construction of language and the formulation of statement, a new relationship that informs all our subsequent exploration of computational representation and process. Through the following century, says Badiou, "artists actively distributed he abstract conditions for an affirmationist art" but "the constellation remained un-sketched" [4, 135].

The notional work, the aesthetic artefact with all its abstract, representational, deictic and material components, we will call the *work without content* – an assemblage that with its particular mode of performance makes possible the reinstatiation of the original impulse and its exploration in a shared present reality. The work-without-content demonstrates that *potentiality* can indeed have form. Such works achieve their ‘energetic status’ in satisfactory performance [1, 65].

4. INTENTIONAL ACTS

What we tend to see in the instantiation or performance of such work – however technologically radical – often comes from a well-established and safe repertory of strategies, most of which involve the denial of presence of the performing or listening subject. The re-examination of what is actually widespread artistic practice, the acknowledgement of its resonance, might encourage the re-confessing of the subject. Technology allows for the dynamical reconstituting of the relationship between text (everything from a score to a circuit-board), environment, acts and surface – the sonic reality of a particular performance. Even where not actually present, technology has produced a common discourse. We all speak some cognition, some processing, some montage, enough popular science to know that our high-school classical maths and physics isn’t the whole story. We all know that the technologies of sensing, computing and communication are ubiquitous. The intentionality of acts is the crucial common element in this work - the presence of the subject in confronting the silent room.

The composer as subject is also probed anew with each instantiation. Rather than the death of the author, we enter a situation in which the presence of their gesture is fundamental to the process of ‘making visible’ [2, 61-72]. Agamben describes the self-annihilating state of art: "… its link with the real world has grown weak…. [Art has] the inability to attain the concrete dimension of the work" [1, 59]. He looks to Aristotle to suggest that the bringing into shape of art through technics – the act of poiesis - might now embody the aesthetic power lost to the disembodied work. In making a similar point, Stiegler sees the technics of our time as representing a new form of cultural memory, as reconfiguring time as much as space [16]. This act, not the reproduction of a sonic simulacrum to engender a cultural simulacrum, is where the ethical responsibility rests of the artists through which the work comes into being, and where the listener may share in the search for the "concrete". Its concrete nature, its content, is local. Its originality lies not in what Badiou calls "the singularity of the artistic procedure", but in closeness to its origin, as Agamben points out. The cultural and creative structure, the intentional acts and the contingent decisions that make up a work are redistributed to bring inscription – origination - into the shared present.

5. WHERE DOES THE INTENTION LIE?

Technology affords action-at-a-distance in space and time – Lyotard’s *telegraphic culture* [13]. It transforms the causal relationship and with it the intentional. The inscription of the surface is the result of a distribution of explicit and implicit intentionality, decision-making and habitual practice through what we might still lazily think of as composers, performers, technologists and audience. We have come to recognise just how complex this distribution is even in the most conventional of scenarios. In the kind of technologically-mediated interactive or improvised or real-time or situated work we are considering here, its temporal sequence also becomes nonlinear and contingent. Our tendency to prioritise spatial or visual models may lead to insufficient consideration of the temporal distributedness of our work. Form is perhaps the least well-researched aspect of this mode of music, of sound art. In this anniversary year of *Silence*, it is important to
remind ourselves that one Cage's principal lessons concerns the architecture of time.

6. WHAT ARE ITS MECHANISMS?

Lyotard uses a metaphor from memory to understand the formal implications of this socially-, spatially-, temporally-distributed writing-at-a-distance; it has resonance in the evolution musical form. He identifies three categories: breaching, or putting into series, scanning, or search and recall, and passing. This last category comes into play in our case. Lyotard identifies it with the phenomenon of anamnesis, outside the scope of willful recall – knowledge without remembering. This raises a vital and non-trivial technical question: how do we identify salient structural events as they occur, whether by ear or machine? Without this kind of intervention, narratives of interaction, invention or situatedness are empty – the work works through it one dimension, mechanical or arbitrary.

At issue is the management of emergence, of events that add to the syntactical repertoire of a work or transform the dimensionality of its space, a process perhaps analogous to Agamben's understanding of entelechy [1, 65]. Several candidate approaches have been proposed; Clayton provides a view of their scope (‘from quantum physics to religion’) [9], while Crutchfield's taxonomy is still valid [6, 269-286]. My own view is that as well as addressing aspects of embodiment in performance and its environment, we might usefully consider the embodied nature of computing itself. This approaches Cariani's view that such phenomena are ultimately deterministic; what we are dealing with is emergence relative to a model [7]. Adopting a strategy of representational redescription (that is, an emergent event is deemed to have taken place when the describing system can no longer account for events simply by elaborating its current description) the analytical and descriptive capacity of a particular technological system becomes as significant a parameter as that of the performer. Clarke and Hansen's second-order systems theory view looks to the early work of Foerster and Varela [8]. If we return to the temporal distribution of decision-making, some of the task of observation – of materials, processes, interactions – is shifted from the apparently time-independent phase of composition to the certainly time-critical act of performance. In works such as we are discussing there have to be levels of observer – machine, man or both. Some measure of hierarchy is inevitable, whether planned or dynamical.

If such events are to be space- or discourse-transforming, the issue of downward causation is unavoidable. Tricky music-theoretical and computational questions may be avoided by positing this entirely in the performers and listeners, but they are important to contemplate. For Žižek such emergence is a function of ignorance; it becomes a question of subject:

“Underlying all these considerations is the ultimate difficulty of the notion of organisation; if we are to effectively account for the autonomous ‘quasi’ causality of the higher level, it should be a minimally retroactive causality, a self-relating causality that runs backwards in time or, as Hegel would have put it, the act of ‘positing the presuppositions’. The solution lies precisely in the notion of the noncompleteness of physical causality: freedom retroactively determines the causal chain that comes to determine me, and this minimal space of choice is sustained by the inherent indeterminacy of the physical processes themselves” [17, 114].

I am suggesting, after Agamben, that the ignorance of the subject in the face of future musical acts and their consequences is precisely the cultural common core of the work-without-content, and that we should hold it at the centre of our attention when trying to engage with it as composers, performers, critics or listeners. Far from infinitely regressive difference and uniqueness, this sense of present, situated creative challenge is what all who come into contact with it have in common. Every work has a unique pattern of distribution through culture and time that offers its participants glimpses of alternative modes of time and meaning. The mapping of this distribution in the work without content, making explicit the parameters of its emergence-management, both acknowledges and empowers the intentionality of the individual work and affords a discourse, the emergence on a cultural level of commonalities as well as difference. James Clifford stated two decades ago that his response to the predicament of culture was to ‘open a space for cultural futures, for the recognition of emergence’ [10].

7. THE ARTEFACT

How can we understand the combination of machine, human and environmental factors that make up this work? Again, Agamben provides a possible answer [3]. He re-interprets Foucault's dispositif as the apparatus an assemblage of technological and cultural elements, of practices, devices and structures: "I will call an apparatus, literally anything that has in some way the capacity to capture, orient, determine, intercept, model, control, or secure the gestures, behaviors, opinions, or discourses of living beings." His intention is to identify such structures, to be able to criticise and dismantle them. However, the same critical awareness might serve to describe and design the kind of multi-modal network that characterises our works. Agamben understands the internal workings of such an apparatus as an economy – to paraphrase: what goes around and by what routes and mechanisms. We might map these works on the basis of state-change of act, information or structure, points of interface within the apparatus, a sort of Poincaré map of the trajectories of its constituent elements.

Seen as a whole, this is consistent with Simon's observation that the natural state of the contemporary artefact is that of an interface, relating an inner environment to an outer environment [15, 6]. He points
out that contemporary artefacts - artificial constructs – are as much part of nature as any others; the properties of their embodiment are equally part of our design and its behaviour. Observation and hierarchy in a machine context imply simulation. Indeed, simulation, or the implicit simulation of recognition or prediction, is one of the most constant factors in the kind of work under consideration. Emergence as described above could be understood as machine or human reflection on a crisis of simulation. Simon also suggests that simulation is the default mode of operation of the contemporary artefact, the source of new knowledge. In our case, we have at the very least the inter-interpretation between human and machine model. Every representation, each process constitutes a model, and every interaction between them a state change. A work is a complex network of such interactions, characterised by their map and dependencies. Like Lyotard and Stiegler, Simon sees the role and management of memory as being a key characteristic; whether conscious or otherwise, stored or embodied in the state of a dynamical system, the place of memory in a work is a defining property.

8. IMAGINING THE WORK-WITHOUT-CONTENT

How can we imagine such work, in the absence of its content? To return to our starting point, Luigi Nono cited Musil: if there is a sense of the real, there must be a sense of the possible. That our default cultural relationship is with simulacra, with the products of simulation, becomes a strength. It re-empowers art to instantiate the real.

Perniola analyses the predicament of culture along different axes to Badiou. Art tends to be understood by virtue either of its uniqueness or of its commodifiable properties, a nexus of communication complexified in a media-driven culture; both are ways of rendering it powerless. A third way, he suggests, is to characterise the work by the shadow it casts backwards and forwards - a shadow because the knowledge is not entirely knowable [14]. This is not a haziness of definition of content, however: “This third form of art is known not by compromise but through a series of non-dialectical ‘arrangements’. The work remains "extraneous and difficult" but retains its autonomy.

The work without content is an anamnesis-generating interface between multiple pasts and presents. Most crucially, it is an interface between the originating impulse of its creator and the latent originating impulses of its listeners. As a paradigm authentic to our own time, the work without content also offers us a way of engaging with work from other times and places.

9. REFERENCES