

1. What seems to me to be common between these two, very different works by Hecker and Hennix, answers to the first principle of INSTAL - that 'Music is about more than just music'. They both seem to me to use sound as a tool of speculative thought: which means something rather paradoxical: If we understand that 'speculative' means some set of ideas that can tell us something about the structure of experience, but cannot themselves be experienced, then there's something paradoxical about using a work of art – a manipulation of experience – to investigate the realm of the speculative. And yet (and this is why we are here) *sound* in particular seems to have the capacity to evoke the speculative.

3. Two comments here: 1. If we maintain that Ideas are not just 'in the head' but are the very structures of reality, then of course the material manifestation of these Ideas offers something more, or at least, something different, than their formal or discursive manifestation. 2. At the same time, in any visual or auditory manifestations there is a necessary 'falling short' of the Idea, and this falling short may itself be an important part of what such works do.

4 .Both Hecker and Hennix's work concern concepts of time and infinity. Where Hennix's work interests itself in creating the fullest possible experiential manifestation of a *timeless structure* in which sound is experienced as a *quality of space*, Hecker's piece *Speculative Solution* is concerned with a reconceptualisation of time as *absolute time*, and the evocation of a constant possibility of change. In doing so, they make very different use of concepts of infinity.

In any case, both are concerned with using music or sound as an element in a process that is 'more than sound'. They both deal with ideas that cannot be fully *represented* sonically; instead sound is used as a tool to make ideas compelling and accessible; or to make ideas 'livable'. I'm interested in whether this manifestation in experience involves a kind of inevitable betrayal or failure of aesthetic experience before the Idea; as I'll describe, in developing *Speculative Solution* with Florian, we tried to bring this question into the work itself.

5 .The commission of *Speculative Solution* came about after I had been working with Florian already for some time. I began to understand his engagement with

psychoacoustics as related to an attempt to analyse and, finally, somehow break down, the 'conditions of objectivity' for sound, the conditions under which we recognise something as 'a' sound.

6. Psychoacoustics investigates explain how, from the continuous series of molecular disturbances that constitute sound, the brain constructs or reconstructs sound *objects*, which in turn are attributed to sound *sources*. That is, theories of psychoacoustics deal with the question: what is 'a' sound, and what are the principles according to which we differentiate, from the raw data that reaches our ears, one, two, or many sound objects, locate, identify and react to them. And there are various psychoacoustic 'effects', reproducible experiments that demonstrate the point at which these principles of construction kick in - in other words, these effects allow us to hear our own brains 'putting together', assembling, sound into sound objects. For example what Bregman calls the 'continuity illusion', which specifies certain conditions under which we hear one sound 'continue' even when it's entirely masked by another, so a kind of 'phantom sound object' created by our brain's default tendency to look for objects that obey certain consistent rules. Or Blauert's 'localisation blur' which specifies conditions under which a sound object can be created that cannot be localised to one place but is 'blurred' across space.

It is these effects that Hecker often manipulates in his work, creating environments where attention and awareness is focussed on the act of sound-object - construction itself, and on the different ways it has been theorised and experimented on.

7. So, I began to see this work related to a kind of 'spontaneous metaphysics': the evolutionary biology of our brain has endowed us with a complex set of rules that express a kind of biologically-instantiated "theory of objects" or a "metaphysics". So psychoacoustics in fact describes a kind of systematic hallucination - sound objects are hallucinations, functional modes of hallucination that have favoured our species survival, enabling us to employ sound in a useful way; but which can also be made to 'misfire' or break down.

8. So, that was where I was with Hecker's work when I saw some points of connection with French philosopher Quentin Meillassoux's short book 'After Finitude'.

Meillassoux rethinks what is called 'Hume's problem' - a classic problem in philosophy, put forward by the Scottish philosopher David Hume in the eighteenth century. Meillassoux offers a new solution to it, what he calls the 'speculative solution'.

Hume had asked, simply, how we know that the laws of nature will remain the same tomorrow as they are today - how do we know the sun will rise tomorrow? Or, today we hit a billiard ball at a certain angle, and it travels for a certain distance in a certain direction, but how do we know that, tomorrow, exactly the same impact won't result in its suddenly transforming into six hermit crabs suspended in mid-air? Since we can imagine any number of bizarre things that might happen, how do we know things will continue as expected?

Obviously we can't know this for sure on the basis of experience. Experience only tells us about the past. But equally, reason doesn't help us, because, try as we might, there doesn't seem to be any watertight rational argument for why the laws of nature **MUST** stay the same.

Hume's conclusion was that we had to shift the locus of philosophical enquiry, from an attempt to use rationality to account for the laws of nature, to an inquiry into how human experience *generated* the notion of laws; into habit and repetition. Repeated, consistent experiences generate expectations, and this is the source of laws of nature, they are artefacts of the constitution of human understanding, not something that can be identified rationally.

9. Now, Meillassoux suggests that Hume has squandered an important insight here. Hume thinks that reason fails in the face of this problem, because it can't give us any reason why the laws should necessarily remain as they are. But Meillassoux says this is no failure, it's a positive insight; a piece of positive rational knowledge: In fact reason tells us - and according to Meillassoux, we should accept the verdict of reason no matter how counter-intuitive - reason tells us that, not only is each *event* that happens according to the laws of nature contingent - it could have been otherwise - the very laws of nature themselves are contingent too, there is nothing necessary about them.

10. Philosophers had tried to construct various metaphysics to give a rational account of universal laws of nature, but for Meillassoux, reason can't justify any of them, instead it

delivers us to what he calls a pure hyperchaos, or absolute contingency: underlying everything is not some ordered metaphysical substrate, a set of ultimate laws; but just utter chaos. The world could stay the same for aeons, or change abruptly and absolutely at any moment, with no rule linking one moment to the next. It's a pure time, time separated from any becoming, since becoming always involves metaphysical rule linking what happens in one moment to what happens in the next. So for Meillassoux, reason gives us access to this thought of hyperchaos.

11. Now, the next question - and this is where infinity comes in - is, if anything could change at any moment, why doesn't it? Why is our experience so stable? Surely if this pure hyperchaos was the ultimate level of reality, then we would know it. Quentin's answer to this uses the theory of transfinite sets developed by Cantor. Cantor had demonstrated mathematically that, once you have an infinity, it propagates it, you can extract another, larger infinity from it; Cantor therefore shows that the All is unthinkable.

12. Meillassoux uses this to argue that we can't judge this theory on the basis of probability: we can't use probability to say, if the laws of nature could change at any time, then 'chances are' we would know it by now, 'in all probability' we would have experienced these moments of feverish, mad, irrational alteration and change.

13. If we can't think, or number, the totality of possibility, then we can't talk about the probability of any one possibility being fulfilled. For this reason, it's entirely consistent to that underlying nature is a pure hyperchaos, with no reason to stay the same from one moment to the next, AND that, in fact, our experience is stable. So Meillassoux uses the transfinite to prevent mobilising the fact of experience - the fact that experience is stable - against the rational insight into the absolute contingency of laws.

14. The end point of Meillassoux's argument, what he wants to protect against this probabilistic reasoning, is then this powerful rational intuition - and I'd stress this, 'rational intuition' - it's the use of reason to directly apprehend something about reality - a strong intuition that there is absolutely *no reason* for things to be as they are rather than otherwise. But we're not talking about chaos, a kind of constant change and transformation: Hyperchaos is a state which is consistent with absolute stasis, *and* with feverish change, *and* with any number of different 'laws of nature'.

In other words, there are many metaphysics, there are many sets of laws that determine how things might change through time; all of these are possibilities of hyperchaos, they are all if you like 'quotations' of hyperchaos, or absolute contingency. So, as Quentin has said, this rational insight destroys the supposed polarity between reason and imagination:

Hyperchaos describes a scope of an *imagination* that is synonymous with *reason*, in so far as the founding act of reason is to affirm the contingency of everything – all that *is*, has no reason to be as it is rather than otherwise, and it could be otherwise, in an infinite number of ways.

15. The link I saw between Meillassoux and Hecker's work, and which Florian himself became enthusiastic about, was that Hecker was already probing beneath the 'metaphysics' of the objects of sound, and that in doing so he was very interested in these moments of abrupt change, the disintegration of the 'laws of sonic nature'. We can think of most music as based on some metaphysics, some account of what a sonic thing is and what changes it can undergo over time. In Hecker's work, there is already this intuition of a time in which not only do things stay the same, become, begin and end, according to some set of compositional rules, but a time in which these compositional rules, and the rules for the formation of sonic objects, can also change abruptly. In effect, Hecker's work was already indicating this level beneath the metaphysical construction of sound objects, towards a pure time in which these objects can shatter, diverge, fall apart, in 'impossible' ways.

16. So we began thinking about how a piece would be able to address this notion of hyperchaos. And once again what's important is that it's not a matter of creating a kind of chaotic mess where things are always changing, this would be a total misunderstanding of the concept. The notion of hyperchaos, importantly, goes beyond any kind of random, stochastic, aleatory approach, using chance to generate sound; because 'chance', the feeling of random disorder, is only one possible quotation of what might happen under hyperchaos; there can also be indeterminate lengths of order, and complete stasis. Chance, in the end, is just another metaphysics, no more or less radical than any other.

17. And ultimately, this is what makes a 'portrait' of hyperchaos impossible! It really poses this question of the 'dramatisation' of Ideas in an art work, in a really poignant way; because unless the piece is infinite in length, it is always going to show a distorted view of hyperchaos. Unlike a metaphysics, hyperchaos is not a genre, or a recognisable style.

18. We decided that, since it would be impossible to 'represent' hyperchaos, the way the piece would have to work was by presenting a 'phenomenal analogon' in sound, a portrait of hyperchaos that inevitably fails - it would only present a kind of 'clue' to the concept of hyperchaos. The piece had to acknowledge this necessary failure, and then also include other elements - the cards, texts, etc. - and these elements would each point to each other to stimulate the audience to think hyperchaos, to attain this rational intuition. This relates to the Duchampian notion that 'the audience completes the work' - the work is a task for the audience, not a representation of something that the artist wants to show.

19. A friend of mine John Sellars had written a book in which he discusses the Stoic conception of philosophy as *technical*: 'an art or craft (*techne*) concerned with one's life (*Bios*) [...] central to this conception is the role played by some form of training or exercise [*ascesis* - training, exercise, practice]'. Note that the notion of 'ascesis' is often invoked by rationalists to denote the submission to the conclusions of reason *against* the spontaneous tendencies of the mind; however the notion of 'spiritual exercises' has to a large extent been lost, since the Stoic conception of philosophical thought as something that must not only be *understood* but *brought into life* is generally not upheld. Sellars reports that in Galen, there are two parts to this ascesis: 'habituation' and 'digestion'. Habituation - for instance Epicurus' phrase 'accustom yourself to the belief that death is nothing to us' or Marcus Aurelius 'Contemplate continually all things coming to pass by change, and accustom yourself to think that Universal Nature loves nothing so much as to change what is and to create new things in their likeness'. Aurelius speaks thus of 'accustoming'<sup>TM</sup> through the use of repeated themes: 'As are your repeated imaginations so will your mind be, for the soul is dyed by its imaginations. Dye it, then, in a succession of imaginations like these.' cf (17) above.

20. So I suggested that these 'spiritual exercises' or 'transformation of the disposition of the soul' is what is aimed at, by using the resources at our disposal to dramatise, make vivid, and help the 'digestion' of Meillassoux's concept of rational hyperchaos, to facilitate this 'rational intuition' of the absolute contingency of everything.

21. The whole piece , then, would be a kind of 'preparation' for attaining this thought. And ultimately I think this it has in common with Hennix's work: Sound becomes a part of the *technical* apparatus of philosophy, a propulsion toward a rational intuition.