

## **Live code, live art and the BwO dissection**

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### **Citation:**

REEVE, Hester (2016). Live code, live art and the BwO dissection. International Journal of Performance Arts and Digital Media, 12 (2), 152-162. [Article]

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## **Live code, live art and the BwO dissection**

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Hester Reeve's practice encompasses live art, philosophy, drawing, David Bohm's 'Dialogue' and socially engaged projects. She is interested in the relationship between critical thinking and human agency in everyday life particularly when it is risked through the figure of 'the artist' (where what constitutes an artist is broadly conceived and not exclusive to art school training). Recent public works have been staged at Tanzquartier, Vienna, Tate Britain (working under the umbrella of The Emily Davison Lodge with Olivia Plender) and the Yorkshire Sculpture Park.

### **Abstract:**

This extended artist statement formulates some provocations to the possibilities of live performance which have been prompted by my involvement in a collaborative project between live coders and live artists. Acknowledging that both art forms share a pre-performance conception-operation frame work which then unfolds through live improvisation, I explore the differences in how each discipline summons the body ('extended carnality' in the case of live coding and 'critical subjectivity' in the case of live art) in order to provide fertile ground for each practice to challenge the presuppositions of the other. The formulation of my core concerns is facilitated through reference to Deleuze and Guattari's BwO (body without organs).

**Key Words:** Body without organs (BwO); critical subjectivity; extended carnality; live art; live coding

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## **Introduction**

In this extended artist statement I want to share some current thoughts about performance resulting from my involvement over the past few years with the live coding community. Initiated through synergistic conversations with Alex McLean, our project ‘Live Notation-Extending Matters of Performance’<sup>1</sup> provided various platforms for an interdisciplinary conversation between live art and live code to take place and has given me much scope for reflection.

By way of background, as a live artist, my training is in fine art and not in performance studies and this distinction is important to note; although live art is often referred to as ‘performance art,’ I rarely call myself a ‘performer’ since it is more the case that I am invested in using my body-being to activate and explore ideas and expressions ‘in the world’ (as opposed to ‘on a stage’). In a self-professed unruly discipline, I am a wild cannon, so I do not claim to be the spokesperson for live art per se (and twenty five years in to a committed practice, I realize that I am, and always have been, more of an artist-philosopher invested in the relationship between ideas and action-in-the-world). Nonetheless, performance and performativity are implicated in what I do. My live art actions are usually site-specific, once only events which are unrehearsed and usually durational – i.e. they are an unfolding live experiment. Already parallels with live coding are apparent.

Interestingly, the two disciplines are not only very close in some ways, they are very far apart in others and it is this dynamic, from my perspective, which has made for such an instructive friendship. Key to the similarities are the innately experimental, time-based and non-commodity orientated performance works that on one hand consciously link to a resistance against market forces determining cultural value and on the other to an almost dogged pursuit of the experience of creativity for creativity's sake. Also, both types of performance -for all their spontaneity - rely on premeditated and highly crafted frameworks (be they a conceptual *raison d'être* or a programmed series of algorithms). It could be said that both practices set up temporal 'systems of personal freedom,' conceptual-operational frameworks for improvisation, which require the author to perform via inhabiting the framework as opposed to communicating it.<sup>2</sup>

The crux of the difference between the two disciplines, for sake of argument, lies in live code performance's 'conception-operational drive' laying in systems of language whereas that of live art lies in embodied critical subjectivity. To put it another way, if both practices are types of 'spatial texts,' a proposition that I explored as part of the Live Notation project, then live code is an articulation of the sign (sign = something that stands for something else and works in relationship to other signs in order to function) and live art is an articulation of the symbol (symbol = something that is not a proxy for its object but a vehicle for the conception of that object, something that operates between human, world and audience and linking to synthetic feeling). This is not to judge or insinuate that there is any correct inception drive for live performances or actions, I am well aware that it can be extremely non-productive to think issues over through supposed definitions and oppositions. However, this experienced (or fantasised) synergy of acute similarity and acute difference between the two disciplines has been extremely productive for my thinking about what is at stake in the practice of live art and attempting this analysis has helped me understand where live art can challenge its presuppositions and, by corollary, where live

code has pause for reflection. All this because what we do and why we do it matters – something I will return to in my conclusion.

### **Extended carnality**

One of the most challenging realisations that has come out of the collaboration with live coders for me centres around how easy it is to limit what we conceive to be the body in performance. You might expect that to amount to my rebutting the live coder for the underuse or even mis-use of the body in his or her work, which is often hunched up, immovable over their laptop, usually always present but hardly ever that visually prominent. But in fact, witnessing the body in live code (such as in Alex McLean's performances) triggered me to consider that actually, despite the explicit use of my body in my work, it might be I, the live artist, who might be unknowingly repressing the body through performance. Could live coding be a way of realizing the body in a way that I had not yet thought possible? Despite often being static in one place, when Alex McLean performs, his body is not just pivotal to the operation of the performance (he is 'typing' and activating code) but the intensity of his mind-body engagement comes across less as 'a body' and more as an 'intensity node' allowing the entire performance space and other objects in it to also come to light as intensity nodes, the fingers on the analogue keyboard exist on an equal footing to the chimeric movement of digital letters across the projection screen, for example. One is affected by a sense of distributed agency where human and non-human elements attain a liveness together. So this is not an extending of the body proper and more a case of what I came to term 'extended carnality' in line with current posthuman rejections of classical humanist divisions between self, animal, matter, machines, information etc.<sup>3</sup> The term extended carnality, as opposed to extended body, is to avoid representative and anthropocentric thought and instead imply a muscularity of materiality; no centre stage figure to the performance, just everything equally valid as a

pulsating mise en scene. Extended carnality is extended touch and it implies that the touching is occurring between everything gathered together. So we can also talk about multi-directional performance too, as if the space and the temporal time of the work are performing themselves too.

This affect definitely arises from the intentional, immersive labour of the performer but in this regard live art is no different. So, something else is at play in live code to affect this sense of an extended carnality via the work's operations. Perhaps this is due to live coding's removal of an obstacle linked to a mind-set around the body that live art has yet to fully grapple with - what Deleuze and Guattari, following the writings of Antonin Artaud, one of the most influential figures in European drama theory, allude to as 'obedience to God' in their questioning after how one makes of oneself a 'body without organs,' or, as they write it, a BwO (Deleuze and Guattari, 1988).

### **Liberation via BwO**

In a radio play, *To be done with the judgment of God*, broadcast in 1947, Artaud claimed, "When you will have made him a body without organs, then you will have delivered him from his automatic reactions and restored him to his true freedom." Calling for the attainment of the BwO is not to speak of literal or metaphorical organ removal but of escape from the all-pervasive reality principle that organizes and thus limits the body through definition as an organism (thus also limiting the ways in which the world itself can come into being). Deleuze and Guattari explain that this paradigm which has so restricted our capacities as physical-psychic-social forces has resulted in three delimiting strata, the organism, signification and subjectification. Avoiding the linear monotheist ideology that the God-paradigm has set up, and which inscribes the most radical amongst us, Deleuze and Guattari advise that a BwO does not have a starting or completion point, each one simultaneously remains 'the egg.' By this they do not infer a seed (which would be to

conjure a logical progression of growth where the egg gets used up in the process) but a, “milieu of pure intensity, spatium not extension” (Deleuze and Guattari, 1988, 164). In a similar circular vein, whilst you have to deliberately work to construct one, a BwO does not have a starting point and nor can you ever complete it; is already laying await adjacent to you the moment you start to desire it. The clearest way to understand what the philosophers are getting at is in this simile: “The BwO is a childhood block, a becoming, the opposite of childhood memory. It is not the child “before” the adult, or the mother “before” the child: it is the strict contemporaneousness of the adult... The BwO is precisely this intense germen where there are and cannot be either parents or children (organic representation)” (164).

Deleuze and Guattari are adamant that construction of a BwO is not a conceptual affair but very much linked to the body and praxis. However, it is no longer useful to think of your body as a discrete entity but of working your body’s mental and semantic possibility via experiments with matter (physical, social, psychic, biological and cosmic) in order to achieve ‘intensities.’ And how? In my understanding, before any steps can be taken, your capacity for an extended carnality has to reach a critical point of desire, an extreme risk of selfhood, (as it did with Artaud). The text is littered with references to the necessity of desire but a desire that can ultimately only fulfill itself via circulating as a component, and not a director, of a BwO. More concretely, Deleuze and Guattari explain that the three strata constructed through the organism model inevitably have to form the first foothold, but only the first. From here on out, the task is to found experimental practices that de-articulate the strata in order to seek after the “crowned anarchy of the multiple” (Deleuze and Guattari, 1988, 158). The self does not disappear but loses its traditional *modus operandi* as an organizing principle and instead becomes an appendix, a residuum, to a BwO. They advise (60): “Tearing the conscious away from the subject in order to make it a means of exploration, tearing the unconscious away from significance and interpretation in order to make it a veritable production: this is assuredly no more or

less difficult than tearing the body away from the organism.” The reader is warned that the process is dangerous. A BwO can be botched if it is made incautiously or too expressly. Instead of an outward force, one gets collapse, inadvertently mining inwards and deeper in to the God strata and this results in an empty BwO, the return of ideology and living via the death drive (as in, for example, the drug addict). This process sounds violent, but then the ‘judgment of God’ has perniciously infiltrated every aspect of our approach to existence and besides which Deleuze and Guattari encourage us (60), “Dismantling the organism has never meant killing yourself, but rather opening the body to connections that presuppose an entire assemblage, circuits, conjunctions, levels and thresholds, passages and distributions of intensity...”

The above account of a BwO<sup>4</sup> stands as an intriguing lens through which to appreciate some of the new affordances that live coding brings to performance. For me, the performing body’s intensity during a live code performance gently circumvents the prevailing ‘body with organs’ paradigm due to its immersion in an operation, the consequences of which are not seen on that body. Instead, the coder is rendered one element of agency within a projected field of live programming language and a space of sound rather than the prime mover of the unfolding aesthetics. And the soundscape produced furthers the escape from the judgment of God paradigm by side stepping accepted models of musical composition. The sound produced is less about harmony and more about producing a type of intensity for both the coder and the audience, hence the devising of the algorave events where people can loose themselves to the experience. As eerie as it is evocative, the signature of the performance is no longer a singularly human one but that of a realm of evolving and interchanging relations between human and non-human. Set up through human desire and thus intention but, crucially, allowing a distribution of performativity across all elements involved on stage, this approach to performance allows an extended carnality that implicates the audience.





Figure 1

### The body proper of live art and the challenge of extended carnality via BwO

Live art discourse has a longer history than that of live code and understandably the artist's own body has been central to it. At a certain historical point, such a use of the body by an artist was a radical breakthrough in the then avant-garde progressive model of art, managing to collapse the theory-practice and art-life divides. A key consolidation phase in the medium's historical development was the Body Art movement of the 60's and 70's where artists employed their body as *the* site of the performance (many artists preferred the word action to remind witnesses that their acts were real acts in the world by real people in order to rupture the hegemonic narratives enacted all around them). Often these acts were extreme, involving self-mutilation, loaded guns and the endurance of harsh conditions over extended periods of time. A mixture of protest, meaningful relationship making and provocation of the art world, such actions were often responding to political and social inequalities or state level violence being carried out in, for example, Vietnam at the time. A key example is Chris Burden's *Shoot* action carried out at F Space, California, in 1971. In front of a gallery audience, the artist had an assistant shoot him in the arm with a rifle from a distance of five meters. Some years later, Burden explained to the *People* newspaper, "I had an intuitive sense that being shot is as American as apple pie. We see people being shot on TV, we read about it in the newspaper. Everybody has wondered what it's like. So I did

it." The imperative nature of the work's title is telling, questioning how easily people are controlled, become passive and desensitized to the suffering of others. There is a social commitment in the work through the taking on of an extraordinary individual experience. This ethical sensibility of using one's body and pushing physical endurance to directly take on social, political and philosophical issues is still important to many practitioners.

Without in any way de-valuing such iconic artworks or the changes in public consciousness they can facilitate (indeed, this is the type of work I am myself making), it could be said, for sake of argument, that they operate within the body with organs paradigm. Whilst individual acts of resistance should remain an important muscle of live art, contemporary live artists might want to question the classical focal point on the 'self-contained' individual body that they can often unquestioningly celebrate.<sup>5</sup> For all my belief in the medium of live art, something has always felt deeply 'distressing' when I have carried out some of my actions. The problem was not with my intentions, the nature of what I was doing, the distaining eye of certain affronted witnesses nor any sense of shame on my part, it was just that something was very wrong. To some degree this has hindered my public career because I have ended up becoming as suspicious of the medium as I am its outspoken advocate. In Deleuze and Guattari's account of the BwO they explain that just as there is a healthy BwO which opposes the organism, there is also an empty BwO *of* the organism that belongs to each of the three strata. It is almost as if live art can fall unwittingly prey to servicing an empty BwO of the body strata of the organism. This is not a challenge I would level at Burden's work, which I see as an experiment with matter (physical, social and psychic) in line with the practices that Deleuze and Guattari encourage and which literally pierces and shatters the body-as-organism transforming it into body-as-intensity node. This allows for transmittance via the body as opposed to communication via the subject, in other words, extended carnality. Extended carnality is to let 'something else' loose without knowing what it is. As an artist this has always been key but I am now

considering that my own unconscious habit of performing unwittingly as a body-with-organs has become an obstacle to the development of my artwork.

Although I did not discover Deleuze and Guattari's account of the BwO until after the 'Live Notation' projected had ended, it was due to the stirrings of the above challenging thoughts that I named the collaborative performance with slub (live coding duo Alex McLean and Dave Griffiths) at Arnolfini *The Hair of the Horse*.<sup>6</sup> The title was in part due to instinctive poetic sensibility but, following the commonly known 'hair of the dog' cure for a hangover, it was also to recognize that something like the hair of an animal carried as much 'charged matter' of the universe and the 'ability to affect' as the entire organism from which it was plucked. I was starting a cure and as is the case with a magic spell, it is the micro perceptible elements that carry the force for change. I focused my performance gestures away from my body as a whole and onto my hands, interjecting them via live feed into slub's projected code. I persuaded Alex McLean to replace the computer-generated sounds played through his live coding with digital recordings of noises made by parts of my body (interestingly, once amplified through speakers, there ended up being little acoustic difference between the two). In retrospect I realize I was trying to symbolically dismember my body in order to allow it to combine with space, airwaves and projected computer code. This really gave me a sense that my body being was distributed in the space as opposed to my habitual somewhat discomforted sense of "I am performing." This felt more conducive to my desire to be read as 'being here' in a performance as opposed to being read as a person; the desire to convey force and not personality.



Figure 2

### **Live code and the challenge of critical subjectivity via BwO**

In this final section, I want to suggest what the practice of live art can offer as a constructive challenge back to that of live code and, again, I will make reference to Deleuze and Guattari's account of the BwO. What I found hardest in my collaborative performance work with live coders was that there was no expectation of developing the *raison d'être* for doing each of the performances in the first place. By this I do not just mean what the performance is about but understanding why it should take place. One could call this a more existential dimension of creating work and it seems very specific to live art. There was of course discussion about affordances of the venues and any materials we might use to garner certain effects. Alex McLean worked on developing his software frameworks for his coding which admittedly I wouldn't have understood nor did I really need to in order to collaborate (we agreed from the start that the artist's body should not become a trigger point for the coder's technological apparatus because this would be too theatrical and

reductive). But my attempts to open up shared grounds for why we might perform in that specific instance failed to take hold. This reflects the different conception-operational drives of the two mediums that I mentioned at the start of this piece; one practice is improvising through technologically available language, the other through their body transfigured as a symbol within a recoding of being human. Returning to the analogy of each practice as a type of spatial writing, live art's use of the symbol - as opposed to live code's use of the logic of language - means that primarily, from my particular perspective as a practitioner, live art strives to respond to being human (or posthuman), to existing in a world (be it analogue or/and digital) as part of the work's *raison d'être* and unfolding process. None of this becomes the literal content of the performance-to-be, its function is to cause a mind state from which the form for each performance is created; in other words, this is not an aesthetic model of creation. So, I literally *cannot* perform in public unless I have an ethical-artistic reason for doing so.

This is to speak of live art's entanglement with 'critical subjectivity' where subjectivity is understood to be problematic but a vital problematic to creatively engage with. The recognition that we have entered the posthuman realm does not mean that subjectivity has disappeared or become inoperative. Whilst I am not a defender of the classical model, it has to be reckoned with that to disavow subjectivity is still a quasi act of subjectivity indicating that critical practices of the self are of the utmost importance if we care about agency and world potentiality. The posthuman is ironically and worryingly accompanied by the anthropocene, which speaks of a species level sovereignty, giving much pause for thought. This type of criticality, informed along Foucauldian lines, is nothing but productive and is, "a kind of criticism that would try not to judge but to bring an oeuvre, a book, a sentence, an idea to life...it would multiply not judgments but *signs of existence* [emphasis mine]" (Foucault, 1997, cited in Boland, 2007, 127).

So, the challenge from live art to live coding is to ask in what ways the latter practice negotiates critical subjectivity and how this might affect the scope of what can get done via it? For all the foregrounded high tech in a live code performance and the relevance of papers highlighting the performativity of code in and of its own right,<sup>7</sup> the live coder decides for the performance in ways that the keyboard does not and is capable of actions like pulling the plug that deprives software, for example, of its agency. The often static, half-hidden live coder immersed in his or her lap top is still an embodied subjectivity and the ‘prime mover’ for there being an event in first place. For this reason I want to tell you how Alex McLean brought a new pair of socks especially for our live coding collaborative performance *Rock-Space-The House*.<sup>8</sup> This appears to be something of a ritual for him before a performance and I definitely read his need to perform in un-shoed feet as not simply further evidence of just how sensitive the live coder can be to their physical body, but that the needs of a subjectivity were present in the room, in the performance. Through stockinged feet, the physical world and the consciousness of an individual edged into the ‘desiring machine,’ that made the multi-directional performance possible, to keep with Deleuze and Guattari phraseology, and became central to the flow of that performance. Yet, in my experience, there is a sense of habitual subjectivity surrounding the practice as a whole and this remains unaffected by the creative work generated and experienced.<sup>9</sup> As is often pointed out, human cognition risks entraining by the intelligent machines we use more and more frequently and other forces are necessary that counter this; subjectivity is as much a type of technology as computer code, it is our earliest experiment with virtual reality and also needs improvising with, risking and becoming creatively transformed.

Interestingly, this part of my exploration can also be made sense of through reference to Deleuze and Guattari’s account of the BwO. Employing further violent imagery, they warn that there can be cancerous BwOs, constructed purely out of their own innate medium and in which case nothing ‘other’ will circulate within or across them.

Instead, 'tumors' develop of their own accord and overtake any possibility of otherness thus threatening totalitarian stasis. For example, they state that money has such a type of BwO, inflation. To my mind, over-aestheticisation in an art form is such a problematic and needs critical subjectivity (ethical questions regarding the relationship between the individual and cultural forms of power) in order to be kept in check. Deleuze and Guattari may call for the disarticulation of classical subjectivity but they also recognize that subjectivity per se cannot be rejected. As element of all three God strata needs to be retained as muscle for constructing a BwO: "You have to keep enough of the organism for it to reform each dawn; and you have to keep small supplies of significance and subjectification, if only to turn them against their own systems when circumstances demand it...and you have to keep small rations of subjectivity in sufficient quantity to enable you to respond to the dominant reality" (Deleuze and Guattari, 1988, 160). Critical subjectivity implies a critique of the conditions that structured that subjectivity in the first place and such conditions will also dominate our forms of art unless confronted. Deleuze and Guattari speak of the necessity of mental vigilance, of using a file rather than a sledgehammer to disarticulate the three God strata, indeed one must conduct one's intentionality towards a BwO with the "craft of the surveyor" (160). This suggests an ethical prowess, a capacity to open oneself up from one's singular point of existence in order to reach the point of critical desire that makes BwO potentiality, that is world-opening potentiality, possible for us in the first place. This is the art of being human (or posthuman), not the work of a computer or of a body for that matter.



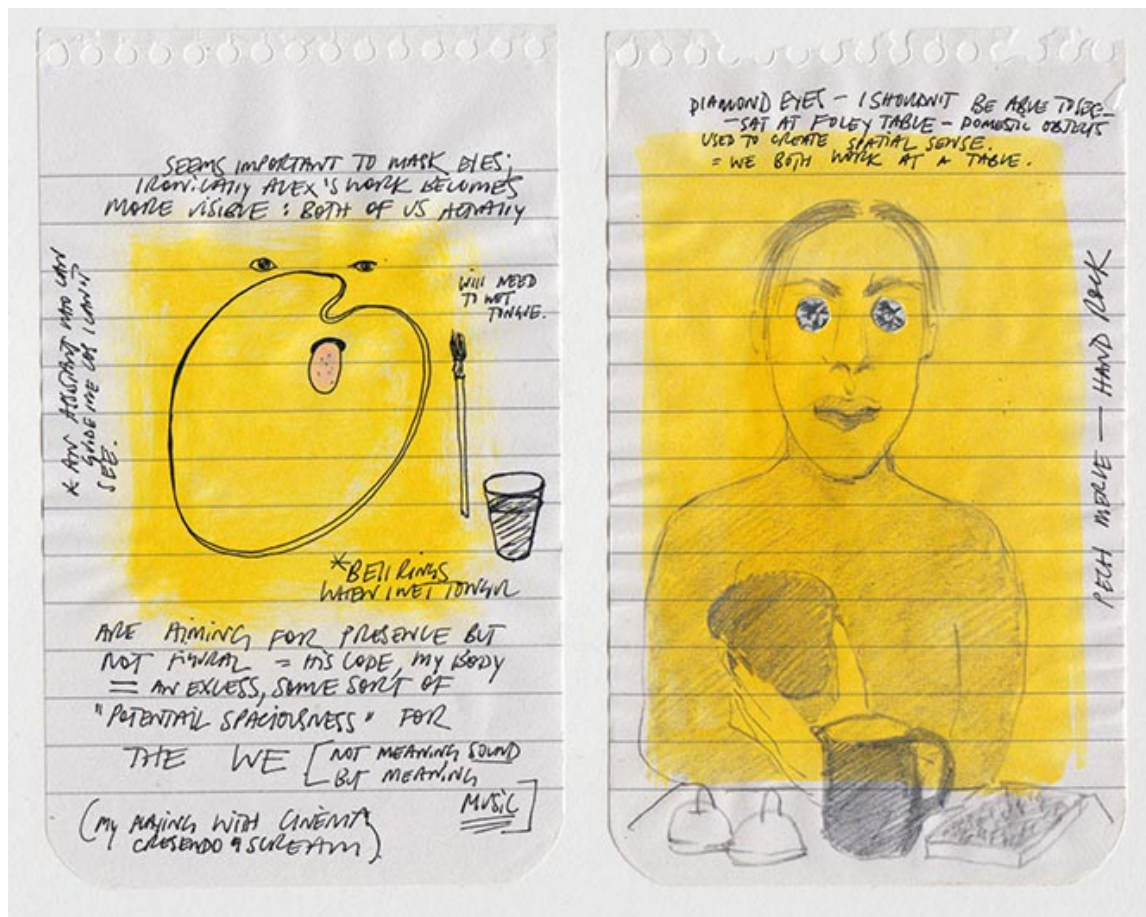


Figure 3

Excitingly, live coding does recognize that the human in the performance is a significant aspect of the work. In an interview with *Wired* in 2006, Alex McLean affirmed, "Live coding places the human right back in the process so you can't really call it 'computer-generated' any more," and it seems early impulses within the field were about putting thought in public and questioning after why we obey rules (Rohrhuber, 2015). So, the challenge to live code relates back to the human being *before* the performance begins, as well as how that human creates and interrogates their relationship with cultural forces. This is to be vulnerable to what Judith Butler has referred to as a crisis in a subject's epistemic status. She contends that critique as a practice is not something that can be voluntarily adopted, it results from 'subject positions' that are made 'unlivable' and thus start to expose the contingencies that made them possible in the first place (Butler, 2002,



cited in Boland, 2007, 128). To a degree, live artists make work out of this very confrontation, for example the 'liveableness' of gender expectations or certain notions of the role of art can become the impetus for publically shared creative action. What constitutes the 'unlivable' for the live coder and in what ways could this open up the medium's potential? I ask this because live coding is in an incredibly strong position to create new forms of cultural experience which might transform human self-understanding in relationship to the phenomenal world as well as inspire the technological imaginary.

## **Conclusion**

Find your body without organs. Find out how to make it. It's a question of life and death, youth and old age, sadness and joy. It is where everything is played out. (Deleuze and Guattari, 1988, p.151)

I have written this extended artist statement out of a commitment to performance as an ethical-aesthetic form of being-in-the-world. Overall, there is something ultimately about the force of being alive that is at stake here. Feeling that force (a force that is as much matter as it is linguistic) is, to use an ironic turn of phrase, not a dead given, there is an art to it. For me, this is the larger 'performance' that all of our activities secretly aspire to. Nor is such a force given to us via our organs such as the heart or kidney which nonetheless form our life support structures. Our sense of existence has to be co-created along side all that is.

Critical subjectivity may be the only 'organ' we have that can register and be affected by existence, by being alive. An artificial organ that has to be de-territorised from the body with organs and that is singularly able to sense that the universe is neither fundamentally digital nor analogue; critical subjectivity is like a pore in the membrane between the knowable and the unknowable. With the liberating realisation that we have

always been cyborg, our ability to reflect on who we are as singular instances of existence caught between the finite and infinite is all the more necessary, otherwise we risk the irony of a 'hegemony of the everything.' Extended carnality, evoked through certain types of performance, allows a consciousness soaked but unrestrained multidimensional touching between real and virtual existences, ensuring subjectivity as an evolving creative component, not a commander, of an unfurling world.

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Figure 1

*Rock-Space-The House*, Alex McLean & Hester Reeve, Lovebytes, Showroom Cinema, Sheffield 2012

Photo credit: Pixelwitch

Figure 2

*The Hair of the Horse*, Hester Reeve & slub (Alex McLean & Dave Griffiths), Live Notation Unit, Arnolfini, 2012

Photo Credit: Furrows Creative

Figure 3

Artist working notes: *Rock-Space-The House*, Hester Reeve, 2012

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<sup>1</sup> Funded by an Arts and Humanities Research Council Digital Transformations award, the project involved six live artists, six live coders and culminated in a series of workshops, talks and performances at Arnolfini, 'The Live Notation Unit,' 2012. The event and the term 'live notation' were explored by Emma Cocker, in *Live Code: Notations on a Kairotic Practice* 2013. in Performance Research.

<sup>2</sup> This is not true of all works produced under the banner of live code or live art, inevitably I am looking at the types of work afforded by each discipline that stimulate my concerns and ideas. I worked most closely with Alex McLean and I find in his thinking and his performances a very pure yet also informed and embodied practice of live coding and so I am mainly informed through this association.

<sup>3</sup> There are many excellent books on this area. For example, see *The Posthuman* by Rosi Braidotti, 2013, or *How We Became Posthuman: Virtual Bodies in Cybernetics, Literature and Informatics* by N. Katherine Hayles, 1999, where she suggests a key marker of our posthuman condition is that "there are no essential differences or absolute demarcations between bodily existence and computer simulation..." (p. 3). Posthumanism does not imply an end to being human, it is a rejection of humanist principles, in particular that of the essentialist subject, and a recognition that human/nonhuman distinctions have become inoperative.

<sup>4</sup> I have been selective in my account of the BwO. It would distract from the main thrust of my piece to explain some of the core philosophical ideas and terminology that Deleuze and Guattari employ, such as the very important 'plane of immanence' (an unending horizon of potentiality but one which is neither transcendent of the world nor internal to the human being) which is central to many of their accounts.

<sup>5</sup> Some live art works of course go beyond this and others effect extended carnality, I am describing a general tendency and only for the sake of progressing some concerns worth thinking about here. Stelarc, for example, was already transforming and extending the physical body twenty years ago. I refer less to the technological modifications he carried

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out upon his body –which in one light could be read as continuing the centrality of the white privileged western male as the spokes person for human development - but to the more effective shift he created when he ceased referring to his flesh as ‘my body’ and extended it by speaking of it as ‘the body’ in other words, recognizing it belonged to the world and could be of service to and co-joined with human and non-human entities alike.

<sup>6</sup> Part of the ‘Live Notation Unit,’ Arnolfini, 2012

<sup>7</sup> For example, see “Coding Praxis: Reconsidering the aesthetics of code” by Geoff Cox, Alex McLean and Adrian Ward in *read\_me Software Art and Cultures*, Aarhus University Press, Goriunova, Olga and Shulgin (eds.), Alexei, pp.161-174

<sup>8</sup> Showroom Cinema, Lovebytes Festival, Sheffield, 2012

<sup>9</sup> I should again point out that I am generalising in order to make my points and speaking from my potentially limited experience of live code performances; it could be argued that the approach of Click Nilson (Nick Collins) already meets some of the challenges I suggest.