Rethinking interactivity: from material to organic modeling.

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ABSTRACT.

This paper examines the limitations that a materialist approach to interactivity has imposed on the genre, creating a disjunction between the richness and complexity of life experiences and the linear, representational nature of interactive art. The author proposes that a shift to an organic philosophy provides a method of accounting for the fluid complexity of relational forces composing an art event, and examines drift and noise as two strategies by which the artist might begin to structure a distributed creative agency within the event.

1. INTRODUCTION

'The change from materialism to "organic realism"… is the displacement of the notion of static stuff by the notion of fluent energy. Such energy has its structure of action and flow and is inconceivable apart from such a structure.' Alfred North Whitehead [22].

Imagine for a moment that you are out walking in the street. To go for such a walk is to create through the endless flow of interaction. Bodily and spatially, each step – and indeed within each step – perceptual, sensorial and social possibilities are opened up, assemblages of forces gathered, altered and reconnected, complexities multiplied, memories activated. The moment is saturated with affectual relations and intensities. With the fall of the same step, previous possibilities perish, simultaneously propelling the endless opening of fresh possibilities of connection [7]. Try to map all the relations that go to make up one instant – one occasion: within your body, between body and world, mind and body, object and object and so on. You will have to consider subatomic, atomic and molecular forces with their general disregard for what we view as discreet bodies. You will want to account for the way texture and gradient of the terrain shapes movement, rhythm and posture and how sensory perception - vision and hearing and so on – begin to ready the body for the next step; how the force of physical habits – body memory – shape patterns of movement in the present moment. Present also will be all the events of relation that have gone into making each tree, stone, person or sound you are interacting

with, effecting your body more or less forcefully. And so on. Then there are the mental forces – 'inextricably intertwined' [22] with the physical - memories, anticipations, random associations made and forgotten, affects that will subtly or bluntly alter you, the myriad mental processes that sit below conscious perception yet nevertheless shape and reshape your body. Beyond that instant, in the next occasion, the concrescence of all these forces creates anew this simple act of walking the street. It is a constant, complexly enmeshed act of creativity: when we look honestly all things, as Whitehead says, are vectors of relations [22].

Such an everyday act is saturated with complexity and invention, and rich with potential. But now imagine you are in a gallery, in some interactive installation. Things happen as you move around – sounds, lights, video or whatever. Perhaps once triggered by your presence the work pretty much does its own thing, perhaps it continues to develop as you engage. Either way, it so often lacks the complexity, intertwined-ness of body and work, the perceptual nuance, the fluidity, surprising originality of connection and thickness of experience of a simple walk outside. While at best the interactive experience might seek to expand awareness of the processes of perception and relation, in fact it too often remains programmatic, lacking in subtle and surprising combinations of memories, affects, sensations and prehensions. This is not to suggest that interactive art's role is to mimic life, but rather that many such works display a paucity of life's rich, heightened experience of connection and possibility.

To me, this is a continuing disappointment that cannot be simply explained away by accusing any particular artist of a lack of imagination. Thus in this paper while I intend to briefly cover some of the common criticisms of the limitations – experientially and ethically – of interactive art, I wish to move beyond such critique to what I would argue is the underlying philosophical problem: the denial of the fundamentally fluid 'vector' nature of interaction. It is this issue that I believe underlies the narrowness of both the invention and critique of interactive art – a 'narrowness in the selection of evidence' as Whitehead might argue [22] - which in its attempts to reduce the field of discussion to a manageable stability, succeeds only in denying the actual nature of the event. My discussion draws heavily on Massumi and Manning's thinking on the shift from

interaction to relationality[1], which I have attempted to extend through concepts of drift and noise in order to extrapolate practical methods by which relation might continue its drive towards novelty in the interactive artwork.

2. THE MYTH(S) OF INTERACTIVITY.

What are our expectations of interactive art forms? Perhaps that it expands the range of art experiences available to the audience, offering levels of 'free choice' and embodied experience seemingly lacking in more traditional art forms; that it will be participatory on some level unavailable in the supposedly more passive enjoyment of traditional forms; and that it will be experiential rather than representational. The existence of some essential qualitative - and indeed moral - judgment of difference between the 'interactive' and 'non-interactive' forms by proponents of interactivity has often been promoted. Simone Osthoff's argument might be cited, for example, that Lygia Clark's work utilizes the viewer's own energy, synthesizes mind and body and explores the sensorial, and replaces the object with the experience – all in ways that painting and sculpture cannot [14] Stoichita's statement that in Lozano-Hemmer's work '(w)e are no longer before the (interactive) work, we are in the work' [4], or Roy Ascott's claim of 'moving beyond the object', from observed effect to participation, and elsewhere that participatory art is the opposite of 'traditional' forms that distance one from the process [1], all can imply some kind of moral superiority in the interactive.

Is there really open-ended decision making in generative or interactive art? In her essay entitled '*Interactivity means interpassivity*', Mona Sarkis argues that the participant in interactive art remains a passive 'user', assembling the artist's vision without any real free choice [17]. De Mèridieu likewise warns that 'we should not delude ourselves: interactivity can conceal programmed actions and predetermined pseudo-choices' [13]. Massumi also cautions that interactive works can dictate an involvement and proscribe possibilities [11], and Lev Manovich describes the rise of interactive art as a shift from representation to manipulation [5]. Here the question of (free) choice seems to be, as Peacock argues, one on which the success and failure of interactivity commonly balances, stating that '(d)ecision making of some kind is a necessary condition of the interactive' [15].

Can interactivity really offer more – or even as much choice as, for example, a painting - can it offer as many options to the viewer either in the way they assimilate content or in the choices of levels of involvement in the work? Even an exhibition of paintings might offer the viewer fairly free reign in their manner of experiencing the space: the choice to skim over some works, view them in any order, dip in and out of concentration and so on – all fairly banal choices that one would take for granted. Interactive works, on the other hand, often require a high level of participation to achieve any presence. As Massumi notes, 'it is important to remind ourselves that there can be a kind of tyranny to interaction' [11]. That is, it is not necessarily liberating to dictate a level of involvement, in itself a kind of operation of power over the viewer that the artist exercises that needs to be recognized. We should not forget, as Manning warns, that the sensory technologies at the base of many interactive works have 'problematic pasts, both as displacers of the corporeal body and in assemblages of control' [8], and, while many artists who utilize surveillance technologies claim to be displacing the power dynamics by making art with such tools of control, they may retain such potential in the artist's hands - hardly a paradigm shift.

Perhaps participatory works might claim a certain freedom from representational content - aiming more for a visceral experience that narration, contemplation or reflection. In one sense it is true that a painting's content is all constructed prior to encounter with the viewer, dictated by the artist and waiting to be read. However even in the most didactic, narrative driven image there presents the possibility – one could argue even inevitability – for a freedom of association, that is, for myself as a viewer to link elements I see to memories. Personal (and cultural) associations are inevitable, whether a colour that reminds me of a flag, facial features I associate with a friend, lighting effects that somewhere in my brain trigger memories of a half forgotten film, muscle memory or a prehension of movement made conscious through an association with a figure's awkward pose. This is not simply a reviving of old memories, but actualization of virtual memory that creates new thought within the event, exactly the kind of 'interaction' that fits with Manovich's argument that the notion of interactivity must become inclusive of notions of psychological processes, mental as well as physical or temporal connections [6].

Any artwork, in this psychological sense, might be read as loosely 'generative', in that on some levels an individual experience still emerges from the combination of viewer and work that in its singularity inevitably begins to escape the confines of the artist's control. Interactivity can struggle to allow such excessive layering and complicating of dialogues. That is, the interaction is often necessarily productive - lacking the multitude of virtual potentials, interactions struggle to become excessive, to outstrip function and destabilize orderly systems of exchange. It is perhaps no wonder that interactive technologies and displays sit so

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[1] In particular Massumi's *Semblance and event* [10], and Massumi and Manning's *Propositions for an expanded gallery* [13].

comfortably in didactic museum displays. Ironically the very participation that in art is intended to free the viewer from constraints operates effectively to direct and lecture them. As Massumi argues, to utilize such technologies in a becoming, emergent fashion they need to be freed from 'use-value' or 'exchange-value', move beyond 'prodding a participant to gain a response', and take on a more speculative nature [11].

What space for contemplation does the interactive installation allow? The curse of interactivity, like video art, is that often I must either abandon midway through boredom, endure to a set endpoint or at least move through in a set order. Here the 'empowerment' that Ascott claims for interactivity, allowing the 'individual to participate fully in the workings of the system' [1] can be rather like the participation in riding a train: certainly I am bodily involved in the machinations of travel, but with limited entrance and exit points and heading inexorably in a prescribed direction. It's a kind of roller-coaster ride experience that that contains a certain level of visceral thrill but that can also, as Poissant notes, 'enclose one into a schema of manipulation rather than propose a real space for dialogue' [16]. The risk is that my movements loose their incipient, 'becoming' qualities, and there is the possibility in participatory works such of merely 'performing the software' [7].

Ascott contends that interaction can become trivial, in a closed, linear system with finite data [1] – a flicking of an 'on' switch with my presence, a prompting of a software program to jump to the next prearranged scene, as in a video game. This is often in sad contrast to everyday lived experience with its endless emergent qualities. These qualities, Manning argues, are a building elasticity of virtual potential, such as the mental and physical prehensions and pre-accelerations that shape the actuality of a movement [7], resolving such tensions - a 'satisfaction' of the prehension [23]. This physical/psychological connection seems to me the kind of visceral involvement that is often lacking in programmatic interactive art. The excess of the virtual is replaced by the probable, open endedness by specific purposes. The art that announces itself as interactive too often limits itself through its dedication to the representation or demonstration of its interactivity, and its insistence on demarcating a stable zone of relation between two discrete bodies – the viewer and their environment.

3. ART AS EVENT: A RELATIONAL MODEL.

It might seem apt here to demand more from the interactive artist (and critic): more complexity, more imagination and more inventive. Of course more creativity will always have its place, but the problem underlying interactive artworks' limitations lies primarily, I would argue, in the philosophical conception of an object, a subject and a work of art. Whitehead's methodology is to re-invent the field of the problem in order to find a new solution. Following this I want to ask here how might we think (and construct) a field of interactive art so as to encourage the fluidity and layered inventiveness that might now be lacking?

Massumi argues that interactivity describes a simple back and forth between two elements that remain discrete and stable [3]. That is, in this context, it is a material view of the world in which I am a stable subject and the art work a stable object, both transcendent of the event of our encounter. But in the 'Whiteheadian' universe of organic philosophy the scenario is very different. Any notion of an 'enduring substance sustaining persistent qualities' [22] is replaced by an actual entity as a 'process…not describable in terms of the morphology of "stuff".'[2] These actualized entities are atomic. That is, they do not change in themselves; rather they exist only in the instance of their becoming, perishing in actualization to be replaced by new actualizations (which we may or may not chose to view from certain perspectives as being ostensibly the same): an endless advance towards intensity and invention. Viewed thus, 'objects' are endpoints in processes of concrescence of complex events of relation, and a 'subject' (or 'superject', as Whitehead prefers) arises out of experience rather than interacting with a world that it somehow remains transcendent of [22].

As in life in general, the artwork here *is* the encounter: art is an event of relations. This notion of relationality, Massumi says, addresses objects and bodies from the point of view of their ability to change and respond – 'a coming together in a fusional event…a telescoping into a potential becoming' [3]. That is, rather than operating as 'establishment and reproduction of an ordered relay' [3], the relational is an immediate, 'emergent process' where something new occurs out of the relations [12]. Thus Lozano-Hemmer's insistence that his work is not interactive but 'relational' [2] - focused not on the fixed or mechanical elements of interaction, but on the potential for establishing relations, that always have an immanent, virtual quality to them. Relations are always improvisational, fluid and emergent, Manning states [7], a 'becoming' connectivity. So I might now seek to address the 'event' of the connections rather than the work as a stable object – the way relations develop between – or create - my body and the work, a 'mutual incipiency', a process of change and response [3]. Manning and Massumi use

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[2] An 'entity' is anything that is actualized. Whitehead also uses the term 'occasion' as interchangeable with entity, and this perhaps expresses the eventness of things more overtly. [22]

the term 'co-causal' [12] to describe this mutual emergence of the new through the flux of the forces of relations. Varela's use of 'enaction' similarly describes such events of relations between the world and body as events of mutual creation, neither wholly internal nor external. This is a 'co-determined' world rather than a stable environment that one is 'parachuted into' [20].

This might be thought of as self evident, useless information. After all, if all things are composed from events of relation, are not all artworks thus composed, regardless of the artist's intentions? I would argue, however, that the way many interactive works in fact operate is to attempt to stabilize such unfoldings, erase the connections to the virtual – the future potential for immergence – and establish enduring actualized connections. With the shift in emphasis proposed I am no longer thinking of creating a stable artwork, but as an emergent or potential (that is, virtual) event that may occur or is occurring. What exists beforehand might be thought of as a proposition for an event, but it exists *as* an event only in a temporal relationship (or rather as a nexus of relationships) with the viewer, enfolded and unfolded through interaction, each nexus creating a singular event. Embodied enaction is always directed towards the 'next', the continuing evolution of the event [20], and therefore towards the virtual. Such events create body-artwork assemblages – contingent networks of interconnections, with multiple, unplanned, potentially contradictory variables of relation.

So in articulating the experience – the event of my body's temporary and temporal co-causal relations with a work I might view the artwork as an 'technique of relation' [12] and be assessing its ability to act as an inventive catalyst for affective co-causal relations to arise. Now we have changed the creative emphasis to the enabling of change, and abandoned control of outcomes in favour of propositional launching points. In doing so whole series of relational forces that resist any practical control might be brought into play to complicate and activate invention within the work. My concentration is now on the buildup of energy and rhythm between and within body and work; how the event moves beyond a mapping of simple cause and effect (move this way, a particular sound occurs), into something that has a 'self-tendency, (a) life movement' [12]. Now complex multiple actions and potential relations might catalyze a singular experience, perhaps moving beyond being able to be mapped or articulated. What is felt/perceived here in the moment might be more intensities of pure sensation, a building of energies expressed through combinations of movement, sound, image, posture and so on – but also potentially contradictory affectual relations that push and pull at the body; a kind of psychologically topological experience, being manipulated into different tonalities by the ever reconfiguring connections.

The excessive nature of such relations outstrips function and destabilizes orderly systems of exchange [2] - affect and sensation can never be fully incorporated into the productive perception, there is always an inarticulate remainder to complicate consciousness. Thinking relationally here begins then, to open artistic design to at the very least the inclusion of a wider range of relation in the functioning of the work. With the emphasis on process not outcomes, slippery, hard to define conjunctive and disjunctive forces – affects, inarticulate sensations, micro-perceptions, emotional tonalities – all might have the potential to be thought of as a fuzzy palette of options to be encouraged.

4. STRUCTURING ACTION AND FLOW.

But for the practicing artist, engaged with an interactive, generative or what we might now term 'relational' art practice, questions of how to structure or enable fluidity and maximize open-ended potentiality in practical terms is still problematic. How to structure so as allow for multiple, surprising outcomes, and how to create organic movement – the complex flow of prehension, synthesis and perishing pursued endlessly by further such creation – remains a question. For we cannot ignore structure - chaos in itself does not seem to me an answer, neither is mimicry of the everyday. Rather the special thickness of experience and the surprise of unusual connection and revelation that the art event can offer needs to be retained without losing the kind of underlying complexity and entanglement of everyday experiential involvement in the world.

Any such discussion of practicalities is necessarily propositional. Indeed, speculation – a drive towards an unknown conclusion – might be seen here as an advantage: inherently part of any technique interested more in establishing lines of flight than destinations. Think of it more as a kind of meta-modeling – an attempt to create potential tools for multiple usages, with the understanding that different combinations of techniques must be assembled to address each singular artistic problem [21]. Meta-modeling, Guattari says, 'abandon(s) all universalizing pretensions' involves a disentangling of oneself from systems of modeling that 'pollute our ways of thinking' [21], creating instead a contingent critical 'bricolage' of possible approaches to be utilized for the particular analysis at hand.

The two questions I then want to ask of any interactive work are: 'how can an art event generate its own satisfaction?' and 'how can the drive towards novelty be maximized in the event?' Without any intent of providing definitive answers, the two concepts I wish

to consider in relation to these questions are those of drift and noise.

4.1. Drift.

Think first of the making of a relational artwork as the building up of propositions. These propositions might be multiple, possibly contradictory. If sound 'A' can happen, or sound 'B', but not both sounds, the sound not actualized still has, as Whitehead says, a creative role to play – both as a 'giveness' that shapes paths of potentiality, and as a continuing link to the virtual. The negated proposition remains a link to what might of happened, to unrealized potential that 'vibrate(s) against the conformal' [22]. Propositions then provide ongoing links towards the potentialities of the event, to a 'second phase' of the virtual: its 'real' potentiality rather than the 'general' potentiality [22], conditioning the potential by inclusion of the circumstances of the emergent event: those selected by the artist (layout, software, sounds, images, shapes and so on), plus what the participants bring (physical capabilities, tastes, moods), plus then, to varying and probably lesser extents, the worldly circumstances surrounding the art event (culture, politics, geography, art histories, weather or what ever), which then create its virtual milieu.

An entity, Whitehead states, 'feels as it does feel in order to be the actual entity it is' [22]. The propositions composed within the art event, are launching points, 'lures towards feelings'. These feelings are none other than the prehensions [22] - internal again - whose drive toward satisfaction is the realization of some potentiality of the entity. 'Feelings' in the sense of prehensions are not necessarily anything to do with conscious thought. Rather they are a drive towards completion of an occasion. Thus an inanimate entity might be seen as being just as capable of a feeling, as driven towards its own satisfaction, as a sentient one. A sensor, for example, in itself might have the proposition of a tendency to notice movement. This may not happen, it is a potentiality, constrained by the given – its position, the mechanics of its construction, and so on. It has 'sensitivity' towards searching for this movement, the incoming sense data that drive its completion, its satisfaction in that instance as a movement sensor – whether it actually senses movement or not (exclusive potentials that in that in any occasion only one can be actualized while the other remains virtual).

And, although we might chose for conveniences sake to think of the art event as a single entity, it is perhaps better viewed as a 'society'[3] of entities, divisible into multiple, overlapping and simultaneous events or entities, each seeking – and competing – for its own satisfaction. That is, during events of concrescence it is always at a point of unfolding, facing multiple potential paths towards the various satisfactions. Multiple, fluid assemblages of eyes/brain/image, ears/noise/speakers/current, software/ sensor/movement data and so on, are each in themselves divisible again, each seeking resolution of their feelings. Such art events might begin with multiple proposals, luring even greater multitudes of prehensions, held in both inclusive and exclusive relation to each other, seeking – competing even – for their satisfaction, driven that is by the creative urge to turn potential into actual. This philosophical stance emphasizes most forcefully that art events are composed from ground up, with an understanding that the concrescence of forces builds towards an endpoint of an actual event, discovered and motivated within the occasion itself by complexities of virtual and actual forces.

How does the art event 'chose' which prehensions it follows through to satisfaction, which entities will actualize? Having set itself into motion through its propositional structuring and gained through feeling its own agency, it is not beholden to any external intentions or drive – it must sort itself out internally. But it does not strive to be the best event it can – the most efficient, original or surprising. That would again imply some kind of transcendent motivation. Rather, we could say, it drifts. 'Drift', as Varela says, implies a system that makes do – it seeks the 'viable' rather than the 'optimal' [20], it is 'pragmatic', its motivation is to find *a* satisfaction, not *the* satisfaction, it makes do with what it has, cobbles together a solution. Enabling a process of drift 'takes the place of task oriented design', Varela argues [20], it implies a system which is truly interactive – both within itself and its given circumstances – composed through that activity rather than representative of determined function or outcome

A relational artwork capable of such drift might take many forms, creating many differing events. This does not mean that it drives towards making events necessarily different - it is indifferent to the quality or quantity of difference it generates, indifferent to the *demonstration* of change and relation that haunts so many interactive works. It settles where it settles. Perhaps some days the events generated would be markedly variable, on others it might seem to settle around the same outcomes. Change to one parameter, one tiny force operating within the assemblage might result in a complete turn around, little noticeable change or be negated by some other factor and perish unnoticed. But the artist relinquishes control over this, leaving it – encouraging it – to work itself out: it does what it does, whether disappointing one occasion, surprising the next.

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[3] While entities themselves continually perish and are replaced, the things we experience as enduring actualities such as art objects or people are in Whitehead's terms 'societies' [19].

4.2. Noise.

The 'society' that is the artwork assemblage can endure because new entities emerging within the art-assemblage conform to common feelings – their emergence is shaped in part by their relation to the society [19]. That is, although they retain potential to change, drift towards some semblance of stability is still possible. How then might a continuous and vigorous drive towards reinvention be structured into the event/s? Rather than just concentrate on the agency of the event to establish layers of relation, how can their perishing and replacement also be driven internally? To become an event that gains the power of continual self-invention of the everyday experience rather than one that drifts to a point of stasis requires a system that is able to include not just connectivity, but disconnections, failed, disruptive, competing and destructive relations and account for interference in the communications. Michel Serres proposes that 'noise' – that is, the interference in a relation – is a necessary condition of its existence, stating that 'if a relationship succeeds, if it is perfect, optimum and immediate; it disappears as a relation' [18]. That is, relations are a condition of difference in a system or assemblage rather than arising out of harmony or equilibrium. Relations are full of 'losses, flights, wear and tear, errors, accidents, opacity' that are their creativity, Serres states, and a system of 'pure rationality', without such excesses, interferences and disruptions is in essence a fascist system [18].

Serres' concept of the parasite presents a potential mechanism to complicate and expand the idea of co-causality. The parasite here has multiple meanings, being both a literal parasite, feeding off the energy (physical or social) of another, but also more importantly meaning the noise in the system of relations[4]. Now too there is a 'noise' in the system – the parasite – to propose. The parasite is essentially creative in that it forces into existence new logic, new combinations, and new orders of exchange [18]. It turns one type of energy into another, turns body movement into electrical current, software computations into sound, image into psychological discomfort. It disrupts communications, but produces something else (excessive) through its (mis)translation of relations. This third position in the system is itself unstable; the roles are interchangeable, fluid - each position is potentially noise for the other two - they lie in between any absolute or fixed position, always fuzzy and multiple; contradictory and irresolvable [18].

Thus it is a system of internally organizing and foregrounding the roles of instability and of difference

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4 Whitehead's 'non-conformal propositions' might be seen as something of an equivalent to the parasite, as their inclusion, Stengers argues, introduces the possibility of the disruption of social continuity, that is, the destruction of order and the introduction of novelty [19].

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in creation, embracing the possibilities of disruption as well as connection. It is a (self-organizing) multiplier of relations – it bifurcates any stable exchange, as a derivation from equilibrium it has an 'abuse-value' rather than exchange-value [18] to create new relationships through the eruption of difference; difference that 'recharges the activity of relating from which all experience emerges', Massumi states, to be seen not as deconstruction, but 'continued construction. Reconstruction on the fly. Not interruption: recharging, resaturation with potential' [9]. This implies creating a propositional structure where relations not only layer, but have also the inbuilt potential to interrupt each other. Whether such interruptions actualize is not the issue – even as virtual noise they create open-endedness: potential disruptions that nevertheless can create a tension, act on any actualized relation to keep it provisional, on the point of change or collapse. Each virtual configuration of the parasite introduces excess, something interesting and complicated to the relationship, keeps it on the verge of the event of expansion or transformation, and multiplies its virtual qualities rhizomically. As Massumi says, 'the virtual is the mode of reality implicated in the emergence of new potentials…its reality is the reality of change: the event' [10].

On a practical design level, the implications might involve firstly the acknowledgment and encouragement of a wider range of disruptive relations, and secondly the construction of software and generative events with the inbuilt potential to interrupt and distort each other. The first of these factors involves coming to an understanding of ways in which sensorial, affective and social relations affect the actual individuated experience in any event. That is, for example, understanding how the emotional tonality I bring to an event will colour my experience, magnifying some aspects, minimizing or negating others, connecting one experience to memories; or the disruption my movements bring to any stability of software/sensor relations; or how the vibrations of sounds felt through the floor will complicate the sense information gained through the ears; or how the affective tonality of the room alters with the arrival of another body, creating a hyper awareness or 'transparency' of temporality and my body in relation to the event, making me hyperconscious of my posture, disrupting my image of myself. And so on, and so on... While on one level banal or obvious, the exploitation and enhancement of these naturally slippery relations brings to the event a natural unpredictability to any planned interaction – continual subtle re-tunings of relations that modulate and invent. Secondly, as explored in the next section, in the more overtly concrete design of software or sensor technologies for interactive works, factoring in potential perishings or

negations becomes as important as the establishment of possible relation.

4.3. Thinking Software (Noisily).

As a tentative step to thinking these ideas in some practical relation to computer music and software, I want to briefly consider Ableton Live, a DJ program much used by sound and interactive artists. The program, while quite capable of operating in a linear, highly structured manner, has also interactive potential – to be controlled by sensors registering a performer or larger environment or data stream via MIDI, or through programs such as Max or Isadora, and for events to follow a more flexible, topological process. Of course in conceiving of the software within a larger assemblage of an art event composed also of parts more readily able to operate provisionally – bodies, sensors and so on – we can to some extent 'diffuse' the pre-designed nature of software responses, but there is a need to address the potential for drift and disruption within the software itself, its 'minor' potentials - its capabilities to operate outside of its original design brief. I want to propose some tactics for thinking this conception of the program.

Live is designed make multiple loops conform to a set tempo – an external stable structuring - so as a first step we might consider the possibility of allowing instead a rhythmic drifting. Live organizes sound clips both inclusively and exclusively: multiple tracks arranged horizontally can play simultaneously, while each track contains multiple clips arranged vertically that are exclusive of each other. Thus simultaneously sounds operate in both a compossible ('and, and, and…') manner horizontally and an incompossible ('or, or, or…') manner vertically - this is already the beginning of a potential network structuring. A dispersed rhythmic structuring can be initiated by turning off the quantization function for each clip so that they begin playing as soon as triggered. Now externally driven, incidental rhythms arise out of the internally generated tension of multiple loops – an outcome of multiple relational events, a contingent structuring rather than a centrally organizing rhythm as an architect of sounds; rhythm as an expression of difference, an elasticity 'stretching towards' an unknown next [7].

Live's midi connections are highly flexible and most operational parameters can be linked to MIDI. Link a clip to a movement trigger, and you initiate a simple cause and effect relation. This can be complicated through building into the design multiple potential relations. For example, other sensor events might potentially turn off the clip, and/or swap it for a different sound, and/or modulate its volume so that it might be inaudible or dominant, and so on. In such

relatively simple ways we move from a linear causation of relation of movement = sound (realization of the possible), to multiple complex potential events intermeshed within a nexus of relations, the 'noise' of disruption a continual force moving the process into reconfiguration. Nexūs of relations here can be seen to begin to operate not just as independently self-satisfying, but also as complexly and fluidly inter-related through disjunctive events of emergence, as potential noise within relations, constructing through disrupting. This enriched connection to the virtual proposes relation as more than just complex vector relations of physical interdependence.

Multiply this exponentially for each sound event and its virtual potentials added to the equation. Think too of proposing these individual actualizations of sound as micro-perceptions - that is, not necessarily individually consciously recognized, but layering in combinations (of tones, timbres, overtones, rhythms, textures), to produce a 'society', the perceived sound, while retaining difference and their atomic nature.

This then is a topological web of relations, self modulating and designed as much for potential perishing as connections, primed for necessary injections of chaos through its multiply entangled chains of cause and effect. Again, such tinkering represents both small, seemingly inconsequential moderations, and at the same time, I would argue, a paradigm shift: the death of the (software) author to be replaced by the propositional event. The artist proposes sound events, in excess of possible actuality. With causality dispersed, notions of an artist or software 'agent' are replaced by a co-causal 'agency' (that is, a subject replaced by process). Within such simple tactics we begin to see sounds within the system becoming free floating events inhabiting a virtual soundscape - sounds as societies vibrating internally and externally with the tensions of relation - they begin to hum with difference and potential.

These are at best starting points for freeing a software program from its use-value, from productive function and stability. Beyond this 'tweaking' there must somehow be a larger picture in which we can conceive of a 'performative' software itself as process, as real time events, intensifications of creative relation. A material conception of a software positions it as a stable structure, pre-existing and determining in its interactions, a framework in which relation plays out – transcendent of the surrounding assemblage. But how can the sound proposed by the software ever escape the reality of assemblages of projection and capture – speakers and ears – through which its eventness is actualized? Can we perhaps more radically begin to understand it as co-produced? That is, as a software potentiality that is itself (re) constructed out of the event of its actualization. In this organic approach we might

begin to see each event as a gathering or holding together of its surrounding constraints. In each event there is an atomic re-enaction of software relations and potentiality – a re-creation, with inherent opportunity for variation and invention, movement and novelty. Thinking through and exploiting this kind of actualization, capable of an internal recreation of its potentiality, is a re-saturating of software with a virtual that is in itself relationally eventful: composed eventfully, always at a point of unfolding or bifurcating. This, perhaps, is a path towards a minor conception of software, a flight path from the software hegemony, that artists might begin exploit to create a relational, dynamic art event inclusive of computer programming.

5. CONCLUSION.

The point, I might argue, to a shift from material to organic modeling of the interactive event, is in a sense to not have a point: to rescue such art-events from purposefulness, to encourage growth, mutation and destruction without predetermination, to enable an event to generate its own forces of concrescence and find its own satisfaction. This implies not an absence of artistic input in any negative sense, but a shift towards propositional, speculative structuring with an emphasis on the intensification of experienced relation.

Whitehead's philosophy offers the vocabulary to describe these dynamic, emergent and complex events of relation, which, he argues, cannot be conceived as static, stratified 'stuff', they can only exist in the unfolding of their eventness. The task for the artist, from this standpoint, is to steer interactivity back from an artificially stable plain towards the propositional, and to invent ways to keep the event, the temporal experience of participation, unstable, keep assemblages fluidly creative. Here perhaps discourse can move beyond questions of chance and freedom that hound interactivity to death, and focus on the 'eventness' of participation rather than demonstration of its mechanics, in ways that are capable of opening up to excess and disorder, embracing the complexity of movement, sensation and affect that is the nature of embodied experience.

For me this is a positive shift that represents an expansion of the potentiality of interactivity, an opportunity to absorb the lessons of the Conceptual art movement's radical move from the representational to the propositional without losing the immersive, visceral strengths of the interactive experience.

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