

## Microsonic sensibility: the phantoms of affects to come

By Eleni Ikoniadou

*If seeing is not involved, it does not mean that one sees nothing, but equally that one sees an infinity of things* (Bertolt Brecht)<sup>1</sup>

Western musical models of composition have traditionally tended to be conceived within punctual systems, to function inside musical codes and to reinforce the evolutionary mantra of succession of events within a linear sequence. Symptomatic of this rigid model of engineering, in which the production of forms and structures succeed each other in time, is an affinity for representational thinking and a concern with hierarchical ranking: measuring the purity and originality of a term, its identity, against an ideal standard. Recent experimentation in digital composition and generative music attempts to overturn this insistent reliance of music in systems of representation and linearity. In the words of Brian Eno, we are moving from a design paradigm to a biological, evolutionary one, where the artist creates the conditions at the bottom to allow a random growth of things to happen.<sup>2</sup> Generative music is arguably the process of making music with the minimal of human intervention and it is based on a biological model of algorithmic manipulation, such as random number generation and rule-based systems.

This shift from engineering music in the studio to manipulating genetic musical data bases in the lab is, on the one hand, an illustration of control societies at the core of digital capitalism. The 'new monster' that Burroughs proposed to characterise contemporary societies and Foucault saw taking over from the disciplinary model. On the other hand, this shift presupposes a new more dynamic relationship between past, present and future and one that accounts for the potential connections of sound, the body, time and space through sonic experimentations. However, these relations cannot be pushed further or explained in new and interesting ways as long as these experimentations remain confined within the axiomatic dichotomies that insist on differentiating between analogue and digital processes, without accounting for the potential relations between them, or the materiality that emphasizes these relations and taps into their potential: the virtual.

This article aims to re-problematise the notion of time as symmetrical and homogeneous, situating things, bodies and machines by their development in form and in subjective experience. Instead, it attempts to ward off the anthropocentric model in sound composition that determines beauty and final result in accordance with subjective notions of taste. It furthermore questions the validity of the man-machine relationship approached as a pre-determined dichotomy based on differences between species. Finally, it argues that we need to conceive of an ontology of microtime as futurity, pure tendency, where metric time, direction and evolution by adaptation are simply visible aspects of the macropolitical organization of the assemblage. It is the invisible, the imperceptible, the microscopic that electronic sound modulates, marking the potentialities of becoming within each assemblage, impinging on the body's capacity to resonate into the future.

Music is the art of time with the capacity of rendering the sonorous, yet throughout its heavily territorialised history its role has been to reproduce the sonorous and interpret it. Musical history has consistently been burdened with forms of organization that include scales, modes, harmonies, limited

<sup>1</sup> Bertolt Brecht, 'Text on Radio Broadcasting', *Brecht on Film and Radio*, (Methuen: UK, 2000), p. 38.

<sup>2</sup> Brian Eno, originally quoted in David Toop, 'The Generation game', *The Wire*, no. 207, May 2001, taken from Kodwo Eshun's 'An Unidentified Audio Event Arrives from the Post-Computer Age', *Longplayer*, Jem Finer, (Artangel: 2000), p 10.

numbers and theories of counterpoint, punctual techniques and points of origin, all concerning discrete steps in time. John Cage, who pioneered methods of difference in composition against structure and originality, was first in turning the notion of music on its head. These “musical habits” constitute a “cautious stepping” that needs to be problematised, according to Cage, by possibilities “revealing to us that musical action or existence can occur at any point or along any line or curve or what have you in total sound-space”.<sup>3</sup> This sound-space, or what this article will refer to as acoustic space from now on, moves beyond merely technical or metaphysical definitions to an altogether different conception. It is a sound plane that fabricates and stretches time, as we will see, pointing only to unformed potential relations between elements, not fixed structures or subjects. This new conception of acoustic space pertains to the age of cybernetics and it is undoubtedly re-born in digital capitalism, nonetheless, it is different from Wiener’s homeostatic notion of information as code. The latter is essentially conceived as form, striving to establish the identity of things and organize them accordingly.

The importance of control in music becomes apparent with the manifestation of electronic compositions during the time of avant-garde experimentation, mainly in the examples of Stockhausen and Boulez. Stockhausen, for the first time, was able to

from the structure of the composition, thus determining the frequencies of the generators and the durations of each sound. Within this context of experimentation, composition started to occur for the first time at a micro-level of granularity smaller than that of a note, while the goal of electronic music became the proposition that “work and material have the same structure”.<sup>4</sup>

The implications of such a proposition are apparent today in the implementation of generative systems, that is, music in which composers ‘plant the seed’ of a composition by specifying certain rules. The generative engine then completes the process according to the computer code that becomes *the specific genetic material of a structure*. Composer Brian Eno has turned his attention towards generative compositions endeavoring to abandon the top-down approach to design, which results to the absolute control of the designer and the completion of the design in its entirety. Notions of predictability, invariance and specificity are arguably excluded from the production of generative sound, where a population of algorithms evolves randomly through a repetitive process that is constantly changing.<sup>5</sup> The genetic algorithms navigate areas of vast possibilities by adopting a genetic strategy of cross-breeding the ‘fittest’ solution within a random population and then repeat this process on successive generations.

Brian Eno notes a distinction between ordinary music’s artificial repetitions (“like engineering, where everything’s built according to a plan”) and generative music’s organic quality (“like gardening; you plant a seed and it grows different every time”).<sup>6</sup> Following the footsteps of Steve Reich and Philip Glass’s sixties tonalism, Eno uses complex variations of sound, a population of algorithms, based on a system or set of rules repeating in cycles that are incommensurable, that is, unlikely to come back into sync again. The result is a piece that moves along in time, perhaps infinitely, but the perception and experience of the piece is only a moment in time as it is unlikely to repeat again in the future. In the words of Eno, “something happens because of one’s perception rather than because of anything physically happening”.<sup>7</sup>

<sup>3</sup> John Cage, ‘Experimental Music’, *Silence*, (Marion Boyars: London, 2004), p 9.

<sup>4</sup> Steven R. Holtzman, ‘Composing Machines’, *Digital Mantras, The Languages of Abstract and Virtual Worlds*, (Massachusetts: MIT Press, 1996), p 165.

<sup>5</sup> Brian Eno presented these ideas and his work during a conference at the Berlage Institute in Netherlands. This lecture is published in *Hunch Disciplines*, The Berlage Institute Report No. 9, International Postgraduate Laboratory of Architecture, Rotterdam, the Netherlands, Summer 2005. Eno’s interest in generative systems was instigated when he heard Steve Reich’s 1960s composition of *It’s Gonna Rain*, which involves two loops sliding out of sync, overlaying each other in different ways. Reich and the avant-garde that preceded generative music and the microsound movement will be discussed later in this chapter where the connections between them will be established.

<sup>6</sup> Brian Eno, ‘Generative Music’, talk delivered in San Francisco (June 8, 1996, <http://www.inmotionmagazine.com/eno1.html>)

<sup>7</sup> Ibid.

Admitting to a strong aversion of computers as technological constructions, part of Eno's fascination with the generative model lies on a desire for a return to the organic. The future of computer music, he argues, lies in the naturalness of growing little seeds, algorithms, and adding to the digital the quality of change, movement and harmony. Classical music, like classical architecture, is for Eno the epitome of predictability, form and specificity. On the contrary, generative systems, both in music and architecture, are unpredictable, unrepeatable and out of control.

Although generative systems minimise the applicability of control in composition they appear to echo a Darwinian understanding of evolution, where natural selection in a population of species determines the progress of the species for generations to come. The pre-determined rules used in generative pieces today, in the form of digital code, are the pre-determined analogue sequential points in Stockhausen's works. Controlling and structuring the musical elements through their isolation as units of information, treated individually over large stretches of time, points to the individual organism in Darwinian Theory. It is this organism's ability for survival that ensures progress for subsequent generations and it is the codification of life that is adopted in the genetic algorithm method to resemble and imitate organic processes.

Secondly, the evolutionary model marks a separation between nature and God, in which the intelligent latter defines the first through exclusion and annihilation of the bad genes or species. Living systems and organic life are idealized in this approach dominating the evolutionary spectrum, moving towards fixed ends by mechanical elimination. Organic matter is raised in this way to assume the higher order of organization in natural systems, neatly separated from inorganic and artificial reality that cannot fit the nets of human logic and reflection. From this teleological idealism of life, based on purely intellectual analysis, follows the third problem of scientific discourse. That is, the separation between body and mind that effectively extends to the familiar dichotomies between digital and analogue or the real and the virtual.

Following the opposite end of the trajectory from Eno's organic ideality, Kim Cascone's sound compositions occupy a strictly digital domain in an attempt to remove every constraint and definition of what is considered to be music today.

Referred to as 'post-digital' music or the glitch, this is a deconstructive audio technique that allows artists to "work beneath the previously impenetrable veil of digital media" and therefore "beneath the levels of perception".<sup>8</sup> Writing about his practice and the immersive experience of working within digital environments, Cascone announces that it is the tools themselves that have become the message, pushing McLuhan's famous proclamation even further. More specifically it is the failure of the technological tools that have opened up a new genre of possibilities and spawned a culture of sonic ambience emerging out of system crashes, application errors, distortion, noise and bugs. It is these aesthetics of failure that pervert traditional compositional processes enabling new forms of production "resulting from a structural characteristic of the digital medium itself".<sup>9</sup> The blind spot of perception within which the digital microsound operates then, is akin to a notion of object-oriented experience, where the laptop takes center stage and the glitches of the code are pre-determined and pre-existing, awaiting discovery by the human ear.

<sup>8</sup> Kim Cascone, 'The Aesthetics of Failure: 'Post-Digital' Tendencies in Contemporary Computer Music', [http://mitpress.mit.edu/journals/COMJ/CMJ24\\_4Cascone.pdf](http://mitpress.mit.edu/journals/COMJ/CMJ24_4Cascone.pdf).

<sup>9</sup> Phil Thomson, 'Atoms and Errors: Towards a History and Aesthetics of Microsound', <http://www.sfu.ca/~pthomson/Thomson,Phil-AtomsAndErrors.pdf>

If the aesthetics of this new method of composition rely solely on digital tools, and embrace the fundamentally binary structure of the digital medium at the core of their creation, then how does it distance itself from the Western model of rationality that relies on modernist logic? Is this model of form emerging out of the medium's (the computer in this case) structural principles able to account for the connections between the body, sound and space? Can we conceive of a different acoustic space that is not entangled in the binary oppositions between the analogue and the digital, the technological and the natural, the real and the virtual?

The replacement of linear causality in sonic experimentation is not a novelty of the digital age. John Cage's work relied on complete randomness and chance, looking to "take personality out of the composing process"<sup>10</sup>. Cage presented an almost complete loss of control by either tossing a coin or composing a piece out of the duration in which a pianist sits at the piano without touching the keyboard. The random and arbitrary sounds of the environment during a particular moment in time and the use of pianos prepared with paper and nails fixed to the strings, created assemblages of heterogeneous and hitherto non-associated elements. For Deleuze and Guattari, the random processes and pure modifications employed by Cage "is a question of freeing times [...] a nonpulsed time for a floating of music. [...] It is undoubtedly John Cage who first and most perfectly deployed this fixed sound plane, which affirms a process against all structure and genesis, a floating time against pulsed time or tempo, experimentation against any kind of interpretation, and in which silence as sonorous rest also marks the absolute state of movement."<sup>11</sup> Cage used the term noise to describe a fundamental and inseparable part of the processes of organisation of sound, one that is radically different from Wiener and Shannon's idea of noise as a disturbance that should be eliminated from the channel. The composer was for Cage the organiser of sound faced with the entire field of sound "but also with the entire field of time"<sup>12</sup>.

Time, in this sense, seems to be what we falsely attribute to spatially measurable images and is instead Bergsonian duration. Specifically, it is "a real future without a causal past", experienced as freedom in evolution as "the expression of a creative urgency, a fulfilment of novel ends inventively generated in the process of time itself."<sup>13</sup> For Bergson, there is no evolution without the conceptualisation of duration as the continuous progress of the past eroding into the future, swelling as it advances. In other words, we cannot conceive of the present through the idealisation of time advancing from point to point in a sequential replacement of one instant from another. The present, in Deleuze's understanding of duration is a becoming, streaming from the continuous dimensions that are contemporaneous to every present. It is a body's capacity to "coincide with its *potential*. The potential is the future-past contemporary with every body's change."<sup>14</sup>

More recently than Cage, experiments with technology and electricity lead to a new conceptualisation of acoustic space, known as 'Circuit-Bending'. "Circuit-bending is the electronic art of the implementation of the creative audio short-circuit. This renegade path of electrons represents a catalytic force capable of exploding new experimental musical forms forward at a velocity previously unknown. The circuit-bent instrument, often a re-wired audio toy or game, is an alien instrument. Alien in electronic design, alien in voice, alien in musician interface."<sup>15</sup> As electricity flows through the player's body and is affected and transformed through the flesh and blood-flow, the body becomes an active part of the sound circuit that

<sup>10</sup> Steven R. Holtzman, 'Composing Machines', *Digital Mantras, The Languages of Abstract and Virtual Worlds*, (Cambridge, Massachusetts: MIT Press, 1996), p 165.

<sup>11</sup> Deleuze & Guattari, 'Becoming Intense, Becoming-Animal, Becoming-Imperceptible', *A Thousand Plateaus*, (London: Continuum, 2002), p 282.

<sup>12</sup> John Cage, 'The Future of Music: Credo', *Silence, Lectures and Writings by John Cage*, Marion Boyars: London, 2004, p 3.

<sup>13</sup> Irwin Edman, 'Foreword', *Henri Bergson's Creative Evolution*, (Random House: 1944), p xiv.

<sup>14</sup> Massumi, 'Strange Horizon: Buildings, Biograms, and the Body Topologic', *ibid*, p 200.

<sup>15</sup> Q.R Ghazala, 'Of a Future', <http://www.oddmusic.com/illogic/illogic.html>

emerges in the performing space. In circuit-bending performances machine-human space-times are poking matter, tapping into its virtual flow through assemblages of motion capture that can trigger visuals that give their way to sound, which might impinge on the performer's body or could take a life of its own in the physical space that sound permeates and disturbs (air pressure). The human body, a moving water-ball, is not only a receptor but a transducer of sound, actively incubating affectivity like a sound chamber without walls, unable to distinguish between internal and external resonance and feedback. Hence, "a new instrumentarium is being born"; in it "chance-music composers [...] stream unpredictable audio events, elements shifting and re-combining in fascinating ways."<sup>16</sup> Circuit-bending creates new life forms that mesh together bodies, instruments, electric devices, space-times to transfuse their potentialities and give rise to new (but ancient) tribes "of bio-electronic Audio Sapiens".<sup>17</sup>

Rather than an "aestheticisation of the digital" in the context of "abstract formalism"<sup>18</sup>, circuit-bending mobilizes the analogue in order to invoke the *cosmic*. As Massumi explains, the digital is possibility not virtuality and not even potential; in this sense it is incredibly weak to access the virtual coexistence and interconnection of the analogue and the digital, or of the body and the brain. Instead we need a 'war machine' of acoustic space that thinks of the continuities of space's movements and the dynamic unity that it composes with the body and time. A war machine that conceives of "particular ways of occupying, taking up, space-time, or inventing new space-times: revolutionary movements".<sup>19</sup> Microsonic sensibility, far from an interest in communicating information through technology, in other words communicating content or emotion, is variation; the unfolding of matter towards its own virtual centre. These movements are often inaccessible to the senses but impact on the body constantly through the virtual. "The [sonic] artist turns his or her attention to the microscopic, to crystals, molecules, atoms, and particles, not for scientific conformity, but for movement, for nothing but immanent movement; the artist tells him-or herself that this world has had different aspects, we will have still others, and that there are already others on other planets; finally, the artist opens up to the Cosmos in order to harness forces in a work (that) requires very simple, pure, almost childish means, but also the forces of a *people*...".<sup>20</sup> These necessary 'childish means' are more evident in the abstract silences of John Cage's experimentations with paper, or circuit-bending's audio toys like the photon clarinet or the morphiums, than in the digital domain of the glitch.

The microsonic sensibility of acoustic space breaks away from a subjective and anthropocentric understanding of space and time, to offer a new smooth space that is not metric, musical or organised, but is instead nonmetric, undetermined and rhythmic. It is not generative or microsound as it sits uncomfortably in definitive categories. Rather it is a surplus of every thing, every potential relation and collective connection of things: the abstract machine of potential operations that arrive when are actualised (as in the circuit-bending experiments). Acoustic space constructs reality through a process of relations much sooner than it represents it; it deals with relations between the spaces that it produces, the sonorous affectivity that it traverses, the Spinozist body that it exchanges actions and passions with, the movements that it unfolds. These are movement-affects, sensations not perceptions of time, occurring in the Leibnizian world of infinitesimally tiny excitable motions, too small to measure or to be understood by the senses. In other words, every body's and every territory's infinite parts, the capacities in every particle

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<sup>16</sup> Ibid.

<sup>17</sup> Ibid.


<sup>18</sup> Part of the critic of the microsound movement in Phil Thomson's article, *ibid*.

<sup>19</sup> Deleuze, 'Control and Becoming', *Negotiations*, (Columbia University Press: New York, 1990), p 172.

<sup>20</sup> Deleuze and Guattari, 'Of the Refrain', *A Thousand Plateaus*, *ibid*. p. 337.

of sonic matter to bear “a world of innumerable creatures”.<sup>21</sup> These tiny motions of matter were never granted legitimacy by the molar sciences and philosophies of Western thought, challenged as “ghosts of departed quantities” by the humanities.<sup>22</sup> In fact these small perceptions are forever arriving and impinging on the body, only they never make it into awareness most of the time. They are “microawarenesses without the actual awareness, gnats of potential experience”.<sup>23</sup> If they are ghosts of any thing they have yet to occur in a recognisable form. This is why they are more ghosts of futurity than of the past. They are affects of space-time continuums that are less mathematical and quantifiable than they are qualitative and vague.

In this sense, it is the affectivity of sonic matter that simultaneously accounts for the processes of transformation of space itself and of bodily sensory perception that go beyond the phenomenological notion of lived experience. This is because the body is not effectively human. It is more the body that Spinoza calls ‘the thing’, a life form that is machinic and mutable, a rhythm that escapes capture, an alien rather than a human agent. It is future potential impacting on the body-thing indeterminately, pointing to its capacity to become anything; rhizomes forming chimeras, fusions of different species, jumping from one line of evolution to another. Acoustic space traverses these unlikely monstrosities inasmuch as it is capable of emerging by itself “when the machine generates a new sound autonomously, without a human agent. [...] New sound emerges as a machine error. Instead of emulating a known sound, the future arrives as a mistake ruled out by the preset”.<sup>24</sup> Machinic Autocatalysis: A sound-machine-body coupling, out of which the new appears.

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The author of this text is Eleni Ikoniadou, contact: [eleni.ikon@gmail.com](mailto:eleni.ikon@gmail.com)



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<sup>21</sup> Leibniz, ‘A Specimen of Discoveries about Marvellous Secrets’, *Leibniz, Philosophical Writings*, (Dent: London, 19810, p 82.

<sup>22</sup> Martin Davis writes about the criticism of Leibniz’s infinitesimal numbers (“so very tiny that no matter how many times such a number was added to itself, the number 1 [...] would never be reached”) by the philosopher Bishop Berkeley, in *The Universal Computer, The Road from Leibniz to Turing*, (Norton & Company: 2000), n7 p 212.

<sup>23</sup> On this point and proprioception see Massumi, pp196-198, *ibid.*

<sup>24</sup> Kodwo Eshun, ‘Transmaterializing the Breakbeat’, *More Brilliant than the Sun*, (Quartet Books: London, 1999), p 19.