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The Problem of *Modulation* in Deleuze and Guattari: Re-orienting the Ritornello Vis-à-vis Droning

El problema de la *modulación* en Deleuze y Guattari: reorientar el ritornello frente al zumbido

Resumen

Gilles Deleuze y Félix Guattari sostienen que, si bien a veces es necesario dejarse llevar por expresiones más molares y estratificadas de la subjetividad, parte del arte de la filosofía consiste en extraer las intensidades que se esconden bajo las formas territorializadas de la existencia, y saber cómo hacerlo sin sucumbir a las líneas de la muerte y la destrucción. Estos modos de expresión menores requieren un tipo de lógica completamente diferente, una lógica del tartamudeo o del Y... Y... Y..., que ellos teorizan como paradigmático de un cromatismo generalizado, o la capacidad de establecer conexiones inmediatas entre elementos heterogéneos. Para Deleuze y Guattari, el sintetizador modular es un ejemplo especialmente bueno de cómo funciona esto en la práctica, aunque no queda claro exactamente cómo los sintetizadores modulares pueden enseñarnos a producir estribillos en la vida que proporcionen la consistencia suficiente para continuar experimentando. Centrándome en la acción de crear música drone y en el método de Deep Listening —una práctica sonora meditativa desarrollada por Pauline Oliveros—, abordo esta cuestión, así como la aporía de la modulación en la obra de Deleuze.

Palabras claves
Atenuación, música drone, zumbido, pharmakon, situación farmacológica.

Abstract

Gilles Deleuze and Félix Guattari argue that while it is sometimes necessary to get caught up in more molar and stratified expressions of subjectivity, part of the art of philosophy is to

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extract intensities beneath territorialised forms of existence, and to know how to do so without succumbing to lines of death and destruction. Such minor modes of expression require an entirely different kind of logic, one of stuttering or AND ... AND ... AND ..., which they theorise as paradigmatic of a generalised chromaticism, or the capacity to immediately establish connections between heterogeneous elements. For Deleuze and Guattari the modular synthesizer provides an especially good example of how this works in practice, though it remains unclear exactly *how* modular synthesizers can teach us to produce refrains *in life* that provide enough consistency for continuing experimentation. Bringing attention to the the action of making drone music and the method of Deep Listening – a meditative sonic practice of experience developed by Pauline Oliveros – I address this question, as well as the aporia of modulation in Deleuze's oeuvre.

The Problem of Modulation

Gilles Deleuze, as Yuk Hui has pointed out, mobilises the concept of "modulation" in two markedly different senses in his oeuvre. In the first sense, as in *Difference and Repetition* (1994), modulation is valenced positively as a critique of hylomorphism (Hui 76), thereby laying some of the groundwork for the construction of his own transcendental empiricism, as Anne Sauvagnargues (2020) has also argued. The problem of modulation is at once the problem of individuation. In hylomorphic accounts of the relationship between form and materiality, the principle of individuation relates to fully constituted or actualised individuals. In contrast, Deleuze critiques this understanding of Being for its strictly empirical terms, arguing that such an account fails to address the question of ontogenesis, that is, what gives rise to being. For Deleuze, adequately taking up the question of internal differentiation thus requires showing "how individuation properly precedes matter and form" (Deleuze "Difference" 38). This implies that "univocal being" be understood as related "to individuating factors," or the conditions that give rise to being, rather than to individuals already "constituted in experience" (38). By replacing hylomorphism with the problem of individuation, Deleuze and Guattari substitute the matter-form relation with that of forces, "plastic, anarchic and

nomadic" – or then modulatory – a transcendental principle "contemporaneous with the process of individuation, no less capable of dissolving and destroying individuals than of constituting them temporarily" (38).

To explain how individuating processes give rise to the world of fully determined or actualised objects and subjects while remaining differential, Deleuze distinguishes between the actual, virtual and intensive, though these should be understood as three aspects of univocal yet differentiated and differentiating being rather than three distinct processes. The actual comprises the continuous unfolding or individuation of spatio-temporal dynamisms at various scales. Drawing on the work of Gilbert Simondon, Deleuze argues that systems, rather than being homeostatic as is widely accepted in cybernetics, are in fact in a dynamic equilibrium or metastable state which allows systems to respond to ongoing internal and external perturbations. These agitations or disturbances create disparate series or, in more common language, an incompatibility of some kind, to which the system must respond. For example, when a person is cold, "goosebumps" will appear on the skin because the tiny muscles at the base of the hair follicles contract in such conditions, indicating an incompatibility between the person's body temperature and the environmental temperature. To compensate, the body will initiate several physiological responses to conserve heat and maintain core body temperature. These include shivering, vasoconstriction and increased metabolic rate. If these responses are insufficient, hypothermia can develop. The point is that such disparateness forms the individuating factors or contingent conditions prefiguring "the fields of individuation" (Deleuze "Difference" 277).

To establish a connection between the disparate series, for example a person's body and the cold environment, something has to put the disparate series into communication. This "something" is what Deleuze calls this the *dark precursor* which, for its part, produces pure spatio-temporal dynamisms consisting of "internal resonances and forced movements" (277) that give rise to "the constitution of passive selves and larval subjects" (278). This entire transcendental or pre-individual drama is what fully determined objects and subjects emerge from

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and whose "qualities and extensions, species and parts" form "the double differentiation" or actualisation of the system that covers the preceding but often unseen processes and nonlinear dynamics that eventually converge around a basin of attraction or chaotic attractor (278). To be clear, no series is privileged over any other, just as none of them are models of identity reliant on resemblance, analogy or opposition (278). Instead, each series is made up of differences, and it is these differences that communicate the conditions of the event, in effect replacing hierarchies of representation with crowned anarchies and nomadic distributions of intensity (278). These distributions of singularities and variations of relations have no origin except as "points on the dice," with each throw inventing its "own rules" within the eternal return (283). Actualisations are thus nothing but phases of being expressing and expressed by recursive and multiscale constraints which Deleuze calls *intensities*.

Constraints and Modulatory Conditions

Constraints is a concept borrowed from the science of dissipative structures or far from equilibrium open systems that "self-organize and act as coherent totalities in response to constraints" (Juarrero 21). That is, they "persist as themselves in a paradoxical state of dynamic" metastability "despite being in non-thermal equilibrium" (21). What is important about constraints is that they provide us with a rigorous and scientific framework for philosophically thinking about identity, coherence and emergence without recourse to untenable or representative positions. Constraints "are entities, processes, events, relations, or conditions that raise or lower barriers to energy flow without directly transferring kinetic energy" (40). In Deleuze's work, the intensive character of systems is constrained and expressed by a larger recursive causality he names the *eternal return*, drawing on Nietzsche. The intensive thus rhythmically constrains a system through periodic regularities governing the temporal habits and memories of that system, as well as

its potential to perplicate in itself the genetic elements of differential repetition *as such*. These elements, while intensively constraining the system, are themselves constrained by the quasi-causality of the virtual – the pre-individual fund or supersaturated milieu – potentiated by differences that gradually but asymptotically resolve or actualise.

Modulation takes place within such constraints which, as explained in the previous section, Deleuze understands positively in *Difference and Repetition* as the genetic conditions of real experience. However, in his later work on the "Postscript on the Societies of Control" (1992), Deleuze uses modulation in a more negatively valenced way to describe the new form of power developing alongside and beginning to replace what Michel Foucault called *discipline* (1977). Instead of the *moulding* power of Foucault's disciplinary societies that shape individual and collective subjectivities through successive enclosures – the school, the military, the factory – *modulation* is directed at dividuals, already-disindividuated data-persons continually self-adapting to the demands of the world-corporation. Deleuze goes on to argue that despite the problems associated with disciplinary societies, they are analogical, which by implication would seem to mean that control societies are digital in their underlying logic, though Deleuze argues that this is not necessarily the case. In his words, "different control mechanisms are inseparable variations, forming a system of variable geometry the language of which is numerical (which doesn't necessarily mean binary)" (Deleuze, "Control" 4). Hui points out that, in retrospect, the word *numérique* has a double meaning in translation: "firstly numerical, as number for management; secondly digital, which is closely related to the digital networked technologies used for management and surveillance" which together index a "significant reference point for understanding the transformation of modes of control as well as governmentality that have occurred since" Deleuze's publication (Hui 75). Contaminated by control, modulation signals the shift from panopticism to a more embedded form of power, exemplified by the sensors and security cameras found in every major city. Unlike discipline, which is invisibilised the moment it is interiorised, modulatory control

is both invisible and sanctioned, albeit passively so. This reconfiguration is enabled by at least three conditions, though neither society nor power are reducible to these terms. First, control can be matched to a type of machine – the computer; second, to a new incarnation of capitalism – neoliberalism, itself imbricated in a new distribution of working bodies, with the corporation replacing the factory; and third, to a specific type of subjectivity – the dividual. This is a self severed from the world: a cloud-self, AI-powered and sustained by "algorithms, data, and cloud architectures" (Crawford 30) that belie the extractivist "collection of infraindividual data" required to be "recomposed at a supra-individual level under the form of profile" or avatar (Rouvroy and Stiegler 12).

Interestingly, in his seminars, and specifically in conversation with the experimental composer Richard Pinhas, Deleuze conceives of "a certain technological and musical lineage from the blacksmith to the electronic musician" which he relates to the "capacity for modulation" (Stanford 407). In particular, Deleuze uses modular and digital synthesizers to draw a distinction between two kinds of logic: modular and integral. For him, the difference is that modular connection "is forged on a genuinely 'immanent plane'" – "a plane where everything is responsive" such that the system's parameters are brought to the very edge of chaos to produce novel phase shifts or creative transformations (Deleuze Lectures). The digital, on the other hand, is forged on "an integrated plane, integrated specifically because it's distinct" and entails processes that homogenise and binarise the "data" (Deleuze Lectures). Alexander Galloway notes that integration is really a "synonym for coordination or organization in Deleuze" – the "miracle of givenness and the subsequent management of those given beings" (Galloway 102). From this one might assume that Deleuze would argue for control societies in terms of an integral logic, but he makes a surprising move, merging the integral plane with the immanent to argue that the digital nature of control societies has subsumed modulation into its integral functions. The reason for this is precisely because of the conditions mentioned above. The corporation, neoliberalism, the dividual and the computer are all marked by a modulatory logic which, "like

modular synthesis, takes previously stable or fixed constants and puts them into continuous variation" so that former distinctions, such as those between work and home life, become mashed into spaces such as "the home office" (Stanford 415). The problem, to put it more philosophically, is that the positive aspects of modulation become short-circuited by a market logic that distorts continuous variation by transforming it into continuous innovation. Rather than responding to enabling constraints, modulation now becomes reduced to a mere instrument of control and continuous consumer engagement within the market system.

The contradictory nature of the two senses of modulation, while stark, should not come as a total surprise to scholars of Deleuze and Félix Guattari given that their concepts, despite sometimes being valenced in specific ways depending on the context, have no inherent or fixed meaning. These reside, rather, in the mixes of "strata, assemblages" and "complexes of lines" (Deleuze and Guattari, "Plateaus" 505); in the "zones of proximity or undecidability" and the "smooth spaces, composed from within striated space" (507); in the processes of individuation and haecceity; and "in the production of intensities" and becomings that escape the strata, cut across assemblages, and draw the abstract lines of "nomad art and itinerant metallurgy" (507). The problem of modulation is, moreover, not just about control and individuation, as becomes clear when considering how Deleuze and Guattari connect it to the figure of the modular synthesizer. In his book on Francis Bacon, for example, Deleuze makes a connection between the logic of sensation and modular synthesis. He writes:

> Analogical synthesizers are "modular": they establish an immediate connection between heterogeneous elements, they introduce a literally unlimited possibility of connection between these elements, on a field of presence or finite plane whose moments are all actual and sensible. Digital synthesizers, however, are "integral": their operation passes through a codification, through a homogenization and binarization of the data, which is produced on a separate plane, infinite in principle, and whose sound will

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only be produced as the result of a conversion-translation. (Deleuze, "Bacon" 117)

Here Deleuze maintains the modular/integral distinction while also attenuating each term so that the integral functions of digital and digitalising logics are elaborated as coding, binarisation and homogenisation, while modulation is articulated as the immediate communication of difference between heterogeneous series. The latter is of course in line with Deleuze's understanding of modulation in *Difference and Repetition* though it is echoed in *A Thousand Plateaus* (1987) when Deleuze and Guattari argue that synthesizers place "all of the parameters in continuous variation, gradually making fundamentally heterogeneous elements end up turning into each other in some way" (Deleuze and Guattari, "Plateaus" 109). These are the transcendental conditions giving rise to a *generalised chromaticism* – the direct relation between "material-forces" in place of hylomorphically conceived matter-form relations (95). The moment a chromaticism is unleashed by a modular synthesizer, "it becomes a generalized chromaticism, turns back against temperament, affecting not only pitches but all sound components – durations, intensities, timbre, attacks – it becomes impossible to speak of a sound form organizing matter; it is no longer even possible to speak of a continuous development of form" (95). Relatedly, Deleuze and Guattari hold that music has the potential to molecularise sound matter, in the process becoming "capable of harnessing nonsonorous forces such as Duration and Intensity," which is to say it renders "duration or intensity sonorous" (343). The synthesizer achieves this by creating "microintervals" through the "continuous manipulation of various sonic parameters" that are "not limited to the discrete steps of a keyboard" and its diatonic scales, thus embracing the chromatic scale, "defined by a tendency toward increasingly small microintervals" (De Souza 92). When this tendency towards microintervals is extended to every sonic aspect, a new relation between material and force is established: a generalised chromaticism. In so doing, the modular synthesizer "makes audible the sound process itself, the production of that process,

and puts us in contact with still other elements beyond sound matter" (Deleuze and Guattari, "Plateaus" 343). *But what does this mean philosophically, and pragmatically, which is to say politically? And why the modular synthesizer?*

Modular Synthesis and the Problem of the Ritornello

Synthesizers, first developed in the 1950s, are electronic musical instruments that function by generating audio signals as waveforms which are then modulated in various ways to produce sounds that can range from the wild and eerie to something more recognisable as "music." The social and cultural milieus in which modular synthesis is operative – including "technical expositions, YouTube channels, boutique stores, bedroom studios, dilapidated former auto-repair shops hosting regular noise and electronic music shows, audio production classrooms, and so on" (Stanford 417) – are subsumed into the larger material circuits of control societies which directly and indirectly impact the "nature of the materiality of modular synthesis" (417). Like the concept of modularity, the compositional logic of modular synthesis is also doubly valenced, depending on context. That is, synthesizers can be used to produce banality just as easily as it can to create something genuinely new.

In 1955, the first vacuum-tube RCA Music Synthesizer was unveiled as part of a "joint experiment in sound production and manipulation between Princeton University and Columbia University" (Kovarsky). The musical potential of the modular synthesizer would, however, only take flight almost eleven years later when Robert Moog described how individual audio generating and sound processing modules could be interconnected via control-voltage (CV) technology in his 1964 paper, "Voltage-Controlled Electronic Music Modules." Just three years later, in 1967, he produced the now infamous Moog Modular Synthesizer consisting of multiple modules or CV components that are connected with patch cables to create sounds. Although it was a major technical feat, it had several

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limitations, for example the "synth's tendency to go out of tune, having to record pieces one note and one line at a time, and having to manually switch between hugely variable patch cord formations to achieve different sounds" (KMFA), though this did not stop the composer, Wendy Carlos, from using the instrument for her 1968 album, *Switched-On Bach*. At the time, classical composers and critics were less enthusiastic about synthesizers than other musicians, though even they were "hard-pressed to find fault with Carlos' bold new work" (KMFA). At roughly the same time, Don Buchla was experimenting with similar ideas, though he decided against using a keyboard to focus "instead on unique timbral and gestural control" (Kovarsky). This became known as the "West Coast" method whereas Moog's techniques were called "East Coast" or "subtractive" synthesis – a unique technique used to shape complex waveforms by removing or subtracting frequencies to attenuate sound harmonics for the creation of unique timbres and textures.

Typically, analogue synthesizers comprise at least one module for generating the sound, known as a VCO or Voltage Controlled Oscillator. VCOs are circuit elements designed to convert input analogue control voltage – electricity – into a corresponding sound frequency output, most often utilising standard waveforms like sine, sawtooth, square or triangle waves. Each of these have a specific quality, for example sine waves have smooth curves and similarly produce clean and "flowy" sound signals, whereas sawtooth waves have more discontinuity in their shapes which creates metallic or "buzzy" sounds. These sounds are not typically used as is but are modulated in various ways to generate vastly different kinds of music. In a subtractive synth setup, the signal produced by an oscillator is typically routed to a VCF or Voltage Controlled Filter which modulates or changes the tonal quality of the sounds. A filter is an important component of a subtractive voice and reduces the strength or boosts the quality of harmonics. Once filtered, the resulting signal is routed to a Voltage Controlled Amplifier (VCA) which adjusts the amplitude of the sound, allowing for dynamic changes in volume over time. Envelope Generators are used to control VCAs by providing a shaping curve

for the volume, affecting the sound's attack, decay, sustain and release. The pedals on a piano do something similar. From here, the sound can be routed to the mixer, but to create more complex sounds a musician might route the sound via a few more modules for wave folding, reverb, delay, distortion, granulation and so on.

The subtractive method resonates philosophically with Deleuze and Guattari because it demonstrates what they refer to as a multiplicity, a concept borrowed from Henri Bergson and attenuated via Bernhard Riemann's non-Euclidean geometry. Briefly, Euclidean geometry is the geometry of flat planes and solid figures, for example circles, squares, triangles, lines and cubes. It is based on a logical system of axioms from which propositions (theorems) are deduced. What is important is that Euclidean geometry has two fundamental types of measurement, angle and distance, which can be applied to two- and three-dimensional objects. Suppose we call this object (n+1) and the space it represents "global." The German mathematician, Carl Friedrich Gauss, realised that instead of focusing on such global information, one can focus entirely on local information "without any reference to a global embedding space" (DeLanda 4). Gauss thus showed that surfaces are themselves spaces. These topological spaces locally resemble Euclidean spaces near each point. The idea of studying a surface as a space in itself was further developed by Riemann who went on to address the more general problem of n-dimensional spaces, "defined exclusively through their intrinsic features," originally known as "manifolds" (4). This move allowed Riemann to consider a "realm of abstract spaces with a variable number of dimensions, spaces which could be studied without the need to embed them into a higher-dimensional (n+1) space" (4). Instead of representing the container space in terms of the values x, y and z as in n(2, 5, -11), only the instantaneous rate of change – in other words the velocity at *this* instant – is expressed as dy/dx. Here dx is the infinitesimally small difference which allows us to find the rate of change of x with respect to y without recourse to a global embedding space, or then a transcendent space. Think about the philosophical implications: difference itself becomes the *transcendental principle* that is prior to and productive of empirical reality, rather than an empirical

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relation between pre-existing identities. This is also why Deleuze and Guattari sometimes speak of (*n*-1). Similarly, the modular synthesizer has no global embedding dimension imposing an extrinsic coordination or unity of identity.

Perhaps one of the reasons Deleuze and Guattari are interested in modular synthesizers is that they lend themselves to improvisation which is, in part, also why they played an important role in the psychedelic and countercultural scenes of the 1960s. Interestingly, Deleuze and Guattari most explicitly talk about the modular synthesizer in the linguistics and refrain chapters in *A Thousand Plateaus* (1987). While the latter makes intuitive sense and has been written on by numerous scholars (see, for example, Buchanan and Swiboda; and Campbell) it is less obvious why Deleuze and Guattari would forge a link between modular synthesizers and linguistics. The critique they offer is more pointedly aimed at the underlying functionalist ideology of the cognitive sciences, namely that brains are really (just like) computers – an idea promulgated by branches of psychology, analytical philosophy, information theory and linguistics. Functionalism, inspired by Alan Turing's work on universal computing machines "is a 'model of the mind' according to which 'psychological states ('believing that p,' 'desiring that p,' 'considering whether p,' etc.) are simply 'computational states' of the brain" (Golumbia 59). Using the analogy of software, they argue that "function is realized as a series of if–then relations (algorithms) that link physical inputs to outputs such as behavior" (201), thus updating behaviourism's ideas about call-response type conditioning with "conceptual tools borrowed from information-processing according to which mental events are just the algorithms running on a brain" (201). This is also the underlying logic of Noam Chomsky's linguistic model, informed by information theory which was developing at a pace and also conformed to the cognitivists' credo and its commanding metaphor of the computer, which meant that many investigations into cognition, systems, and life more broadly, were grounded in the idea of it being something representational, symbolic, and abstract. The innovation in logic and information would, by the 1940s, become formalised under the rubric of cybernetics which had been emerging for some time, with many

ideas taking shape at the Josiah Macy Foundation conferences known at the time as *Circular Causal and Feedback Mechanisms in Biological and Social Systems*. In just a short period of time, the notion of *cybernetics* became so thoroughly integrated into the social imaginary that the media theorist and cultural critic, Marshall McLuhan, famously argued that cybernetics had produced a "cybernated world" (McLuhan 347), by which he meant not only that it propagated "patterns of automation" and feedback into society (354), but also that it offered a scientific and experimental vocabulary for academics and artists alike. More generally, cybernetics "offered a means to frame the ambiguities, anxieties, and potentials inherent in issues pertaining to control and complexity in art and music" (Dunbar-Hester 136), which included the experimental world of synthesizers. For example, Bebe and Louis Barron modelled their electric circuits on Norbert Wiener's conception of "cybernetic organisms," while Éliane Radigue similarly made use of self-regulating feedback mechanisms for the creation of her *Feedback Works.* But it is perhaps German composer Roland Kayn's creation of what he explicitly called *cybernetic music* that most paradigmatically expresses a feedback circuit. There is a strange tension between the scientific underpinnings of cybernetics and its more creative applications – a tension which existed within the field of cybernetics itself, possibly due to its trans- and interdisciplinary nature which has led some scholars to argue that Wiener, Warren McCulloch and Turing's cybernetics are reflective of the hard sciences (see Umpleby and Dent) while those of Margaret Mead and Gregory Bateson are exemplary of the human and social science cluster (see Heims).

It is precisely this tension that Deleuze and Guattari recognise in their chapter on the "Postulates of Linguistics" where they give an account of the order-word functions of language and the minor operations thereof. The order-word is a function quite similar to that of Chomsky's linguistics in that it effectuates incorporeal transformations of redundancy by cybernetically overcoding information and communication. In effect, this strips language of its pragmatic and political situatedness, defining conditions of possibility in main according to the

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coordinates of *frequency* and *resonance* of established orders. Through frequency conditions the physical form of a sign rather than its pragmatic context becomes amplified so that information contained in statements is bound to signifiers. Resonance conditions ensure that enunciative functions are bound to subjects rather than social milieus (Deleuze and Guattari, "Plateaus" 79). Frequency thus valences the rhythmic constraints of information in such a way that it creates resonances between the order-word and the receiver, thereby articulating a code and a territory, or "insign" (75). In a way, the order-word defines the "computational states" of subjectivity as a series of if–then relations or algorithms. To be clear, redundancy is not a problem per se. Most working systems rely on a great deal of redundancy for their functioning. Deleuze and Guattari recognise this, arguing not for the abolition of redundancy but for a new kind of redundancy, configured according to minor modes of expression with an entirely different kind of logic – a logic of stuttering or AND … AND … AND … – which they theorise as paradigmatic of a generalised chromaticism, or the capacity to immediately establish connections between heterogeneous elements. The use of the modular synthesizer in the linguistics chapter is thus strategically placed to undermine the computational and functionalist rendering of subjectivity stripped of any and all insurrectionary potential, that is, the potential to elaborate being as such.

A question that may arise at this point is whether Deleuze and Guattari, in their use of synthesizers, promote just another theory of machines, replacing functionalism's commanding metaphor of the computer and its representationalist and abstract frameworks with the modular synthesizer. Instead of the idea of the mind as "software" running on the "hardware" of the brain and its two interlocking levels of representation, we now have the modulating functions of synthesizers, leaving us with yet another model of life *sans* life. To allay any such fears let me point out that Deleuze and Guattari are not using the modular synthesizer as a model. In their work, the synthesizer functions as a *concept* or *conceptual persona.* When they write that modular synthesizers are "interval analyzers" and "rhythm synchronizers" (Deleuze and Guattari, "Plateaus" 329) they are indicating that

consistency, or territorial assemblages, are not ritornellos per se, but the "milieu consolidation" between two rhythms; that is, "a space-time consolidation, of coexistence and succession" (329). Their argument, more fully, is that life, like music, consists of various "rhythms" with "different sections and variable intervals depending on the intensity and direction of the force to be tapped" (329). What they find compelling about modular synthesis is how complex and heterogeneous sounds are held together by the same assembly of components shaping the heterogeneous signals to produce what sounds like something homogenous as they take on more harmonic structures (329). So, even though some kind of consistency – a ritornello – is created, it is a consistency that is already a multiplicity, a generalised chromaticism. That is, the sound signals are intensively constrained to produce rhythmic regularities – whether pulsed or non-pulsed – that govern the temporal "habits" and "memories" of the sound. Unlike Plato's Ideal forms which are abstract, eternal and changeless, but "appear" as relative and transient forms in the intelligible world, so that consistency is understood as discontinuous and transcendent, Deleuze and Guattari give us a different image of thought. According to their understanding of the ritornello, milieus and rhythms emerge from chaos, such that every milieu or "block of space-time" is coded "by a periodic repetition" (313) even though the chaos can never be "fully tamed and thus always threatens interference, enervation and collapse" (Gray van Heerden 15). What emerges from the chaos, moreover, is not discontinuous and transcendent, but continuous and immanent, "an articulation from within, as if oscillating molecules, oscillators, passed from one heterogeneous centre to another" (Deleuze and Guattari, "Plateaus" 328). It is to make difference the *transcendental principle* of empirical reality.

Interestingly, analogue modular synthesizers are also continuous rather than discreet, as digital computers are. In his book on Francis Bacon, Deleuze remarks, with reference to modular synthesizers, that "it is perhaps the notion of modulation in general (and not similitude) that will enable us to understand the nature of analogical language or the diagram" (Deleuze, "Bacon" 117). The diagram,

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according to Deleuze, "does not act as a code, but *as a modulator*" (120), meaning there is a "constructivism" at play according to which "the determination of the conditions of the problem" and the "transversal links between problems" are diagrammed (Deleuze and Guattari, "Plateaus" 473). This constructivism is deeply linked to the creation of concepts, which is not some lofty undertaking that results in what Francois Laruelle calls philosophical sufficiency, according to which Philosophy assumes that it is sufficient for rendering everything and anything *philosophisable* (see Laruelle 22), but "the more modest task of a pedagogy of the concept, which would have to analyze the conditions of creation as factors of always singular moments" (Deleuze and Guattari, "Philosophy" 12). So, when Deleuze and Guattari argue that philosophy "is no longer synthetic judgment" but "like a thought synthesizer functioning to make thought travel, make it mobile, make it a force of the Cosmos (in the same way as one makes sound travel)" (95), they are not positing a new dogmatic image of thought to which we should feel ourselves slave to, but offering a set of coordinates that attenuates, amplifies or otherwise modulates a problematic field whose conditions are differential and genetic, rather than representative. By rejecting Kant's "synthetic judgment" according to which the mind imposes pre-established universal categories like space, time and causality onto a passive empirical reality to produce knowledge, Deleuze and Guattari use the synthesizer to argue for an immanent synthesis which emerges from the processes and materials themselves, the same way a synthesizer modulates sound matter instead of imposing a transcendent model of music on the sonic assemblage. Rather than the synthesizer representing a new mechanistic matter-form or form-function ontology, or a spin on the computational ontology of information, Deleuze and Guattari use the image of the modular synthesizer to produce an encounter in thought. One of the ways in which a generalised chromaticism can be expressed is, for me, found in the sonic theory and practice of Deep Listening developed by the experimental accordionist and composer, Pauline Oliveros, which has, alongside the philosophy of Deleuze and Guattari, informed my own sonic and philosophical practice.

The Art of Droning: Modulation as Contemplation

Pauline Oliveros was a central figure in the early electronic and experimental music scene in the U.S. and one of the original members of the San Francisco Tape Music Centre, along with Morton Subotnick, Ramon Sender, Terry Riley and Anthony Martin. As she became increasingly interested in the effects of resonating sounds on bodies, minds, the instruments making them and the performance space, she also realised how much of society is geared towards visual experience rather than the olfactory or auditory. To create more immersive sonic experiences, she designed what is known as the "Expanded Instrument System," an electronic signal processing device she used to create lingering resonant tones with the accordion. Using a network of time delays, mixing routes, microphones and a multi-channel speaker setup, the Expanded Instrument System is designed as an improvisational tool for musicians aimed at enabling them to explore and manipulate sounds in real-time, creating a dynamic and evolving soundscape (Oliveros, "EIS"). Rather than the frequency and resonance of the State apparatus or order-word – or any other transcendent forms of organisation – resonance here implies a minor function, a way in which different elements or series enter into relationships operating beyond dominant major/minor tonal systems.

Over time, Oliveros began more seriously to develop the practice of Deep Listening, which involves the cultivation of a meditative awareness of the listening experience. For her, listening is the art of being able to respond to any given set of environmental conditions. Grounded in an improvisational ethic, she promoted this aesthetic practice not only for professional performers, but also for anyone wanting to cultivate better listening practices – whether that is listening to music, or to the more-than-human musical environment. As Oliveros herself says of the practice: it is "listening in as many was as possible simultaneously" (Oliveros, "Quantum" 30). This involves an exploration of the difference between sounds we hear involuntarily and the nature of conscious listening, done through

sonic meditations, collaborative performances and paying attention to the sounds of nature and everyday life. The notion of "meditation" is not a religious one for Oliveros. In her writing she mobilises it as a concept – in Deleuze and Guattari's sense – to diagram the "dynamic of global awareness and focal attention" (Mockus 39).

Oliveros's own instrument of choice is the accordion – a peculiar instrument with "connections to ethnicity, on the one hand, and schlocky kitsch on the other" (Mockus 89). Oliveros began to play the accordion when she was just nine years of age and was fascinated by it because it "is worn on the body, almost like a big garment," making it is second only to the voice as an incredibly embodied instrument" (90). That is, unlike other musical instruments that "are held in a certain position in relation to the body," as is the case with violins, or sets a kind of "trap" for musicians by keeping them in one place as the piano does, the accordion demands a different kind of relation which Oliveros describes as an "amplification of her breath" (90). *Expansion and contraction.* A diagrammatic composition in which sensation and composition are amplified by breath, movement, the instrument and the environment. For Oliveros it is both embodied, collaborative music-making and Deep Listening that provide the conditions for the creation of "a continuous circulation of power" between "listening and sounding – a give and take that requires an unusual sensitivity to the relationship between oneself and others" (10). In some ways it is like routing control voltage between modulators, now being attenuated for this or that affect, now being moved by the sensual force of sound.

Besides a return to breath and embodiment, Oliveros focuses on acts of remembering and slow walking. This slowness is a crucial aspect of her work, especially the more drone-oriented pieces. Drones are typically characterised by long, sustained tones or chords that emphasise subtle harmonic variations and textures instead of what we traditionally think of as melodic and rhythmic structures. For these reasons, drone music lends itself to the creation of immersive and atmospheric soundscapes. It also moves against more encoded and overcoded sonic structures. "Slowness," writes Éliane Radigue, "does not mean stasis"

(Radigue 261). Slowness "is expansive" while allowing "us to hear up close" (261–262). Although not all musicians like for their music to be classified as drone music, *droning* is a useful orientation as it brings together many of the key lessons taught and practiced by Oliveros with Deleuze and Guattari's critical-clinical project. Drones and droning can thus provide us with an orientation of spirit, the very life of the embodied mind. This is important because the current political economy of spirit is conditioned by techno-capitalism which orients and constrains the life of the mind towards mindless consuming. Because attention itself has become transformed into a commodity, it has triggered a logic of *shallow attention* – the rapid modulation and fragmentation of care paradigmatic of control societies. In these attentional configurations, individual and collective individuative capacities – used for the creation of meaning and future dreaming – are disrupted to such an extent that they can no longer be elaborated (Stiegler, "Disruption" 21). And so it is that many people, deprived of a feeling that life is worth living, find their capacities for fabulating futures through contemplative action directed by "the calculability of the audience market" – "an economy of attention that destroys" attention *as such* (302). It is precisely because Oliveros' work is founded on an entirely different logic, like that of Deleuze and Guattari's theorisation of the modular synthesizer, that I find them useful for thinking about how we might restore our attentional capacities.

The art of droning, as I am postulating it here, is a political praxis: one aimed at creating the conditions necessary for the production of enabling constraints, ritornellos constrained by the quasi-causality of the virtual potentiated by difference *as such*, implying a dynamic, open-ended process of becoming and transformation rather than a predetermined path to a final, global solution. Deleuze and Guattari write that it is "through music that you become hard and memoryless, simultaneously animal and imperceptible: in love" (Deleuze and Guattari, "Plateaus" 187). To become memoryless is not the same as the commodification of attention, also a form of memorylessness, but rather the philosophical idea of escaping static identities and conventional, linear ways of thinking by prioritising

becoming and pure difference. This orientation, I suggest, is droning, which is to say slow, attentive and expansive care. In my own music practice with modular synthesizers[1] I often make drone music, which has led me to think anew about the ritornello, or then the creation of consistency. Improvisational in its recasting by Deleuze and Guattari, I now think of the refrain as precisely that which is produced when care is taken, as the process and creation of contemplation. After all, the refrain does not only hinge on "an intrinsic quality" of sound "but also on a state of force on the part of the listener" to reveal "until then unheard-of potentialities, entering into other connections, setting love adrift in the direction of other assemblages" (Deleuze and Guattari, "Plateaus" 349). For my album, *The Passaging*[2], I created drones to express the non-representational experience of countenancing death – my father's death, certainly, but also death as the generalised condition of digital societies forced out of existence by the pervasive logic of extraction, cancerous to its very core. What is it to passage through life, with life, against life? What is it to pay attention to death, or life? Just as drone music requires absolute attention for hearing the subtle shifts in what may seem to be a quite static soundscape, so too life – life in *this moment* – requires the fostering of deep meditative concentration that moves us beyond an existence of endless scrolling in which life is nothing but a static background.

This is why, for Deleuze and Guattari, art is never an end in itself. It is a "tool for blazing life lines" (187) towards a memory that is asignifying, asubjective and faceless. This is more important now than ever before given the absolute facialising tendencies of AI and its drive to short-circuit our capacities for attention. Rather than simply arguing for a memoryless ritornello, I am arguing for one orientated by the figure of the drone. To be sure, the drone is not the AND…AND…AND… per se, though stuttering is certainly a precondition. The art of droning calls for deep sonic meditations or contemplation which Deleuze

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[1]Bandcamp: https://chantellegray.bandcamp.com/. Readers are invited to close their eyes and listen to the drones loudly.
[2]Bandcamp: https://chantellegray.bandcamp.com/album/the-passaging.

Chantelle Gray

describes in *Difference and Repetition* (1994) as "a matter of acting, of making repetition as such a novelty; that is, a freedom and a task of freedom" (Deleuze, "Difference" 6). As a task of freedom, deep attention must move against the shallow attention of an all-out artificially encoded techno-capitalist mechanics aimed, ultimately, at destroying the very possibility for care and contemplative thought. What the drone offers us is an entirely new condition: one in which the memory of complex progressions and even innovation are rendered redundant in favour of a sustained micro-attenuation – a sustained sustain.

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