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ON THE SPACETIME OF AUDITORY SENSE

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Introduction

> 'What is your relationship to all of the rhythms you can perceive at once?' Pauline Oliveros (2005)

In her book, *Deep Listening: A Composer's Sound Practice*, Pauline Oliveros poses the above. It is a heady question, one that calls for deep perception, thought, even meditation. Rhythms here surely include musical rhythms like beats and phrases. But Oliveros' Deep Listening is a practice attuned to the plurality of orders of rhythm, from musical rhythms to environmental sounds, from daily and yearly rhythms to rhythms of cultural and political change, rhythms of the body, and beyond. There is a vast openness here: a depth and a sense of the many registers of the rhythms of sense and the senses of rhythm. And in all of this there is a self. What is experienced as a self is spacious, complex, differentiated and multiply connected to the world: its only true unity is the diversity of its convergence, the centredness of a thinking without a subject or a sense without object, the coalescence of vastly variegated processes. I argue that these relationships are inherently rhythmic and, indeed, that sound generally and music specifically partake in or harmonise with these rhythms.

Certainly, exploring the relationships of all the rhythms perceived at once does not seem to be a practice with an end. These relations are always changing, expanding, contracting and becoming other than what they are at any moment. Perhaps, then, it is a positioning of this self, or rather this spacious awareness that calls itself a self, that is the thing: a balancing point or temporal confluence that might be called the theatre of sensation. Perhaps it is just this openness to rhythm, a becoming rhythm that hears the rhythm that it is, but also a loss of a substantial essential self in a relationality of rhythms and their centring and decentring that Oliveros asks us to explore.

In this essay, the multi-modal relational flux that is the self is considered in its ever-emergent embodied encounter with sound and, in particular, the spacetime of this encounter, the totality of which constitutes the self at any moment. The goal is to challenge common notions of sound and time sedimented in musicology, philosophy and even sound studies: to invite the most radical embodied approach

to sense and sound possible before the intervention of constructed representations and concepts; to invite the reader to challenge limitations of thought; to bring thought right to the naked edge of sense. Here, auditory sense is foregrounded without being cut off from other sensory modalities, other orders of the real. Janne Vanhanen states that the act of listening '... can encompass a heightened awareness of one's connection to the world in every modality of existence' (in Moisala et al 2017: 180). With listening, we provide a focus or location for thought without cutting off the rest of the world or the body. We remain tethered in imagination to the idea of sound and hearing towards a concept that combines these elements into what Vanhanen calls a sonorous body, or the inorganized ear. 'Sound', Vanhanen writes, '... emerges as a relation between a vibrating source, a vibrating medium and the (membranal) reception of this vibration — all of these form a sonorous body of the sound event, a sonic space-time' (in Moisala et al. 2017: 170).

Imagine a listening act that is immediately beyond sound, beyond sensory distinctions. Awareness of rhythm is such listening, even if that rhythm is felt on the skin, deep in the body or out in the ether. We define this holistic sense of rhythm loosely as an unfolding relatedness of events. Musical rhythm is just one register, one band of repetition intensified for aesthetic effect. It is precisely through the concept of rhythm that boundaries dissolve and systems resonate, that the cosmic and the molecular and even the spiritual can be joined into a single vibrating continuum. Taking the cue from Oliveros' Deep Listening, we will take the question of one's relation to all the rhythms perceived at once seriously. What are the contours of this rhythmic theater of sense in all its complexity?

The Sensing Body

> 'Deep listening is a heightened state of awareness and connects the listener to all that there is.' Pauline Oliveros (2010)

Oliveros' Deep Listening is a highly developed practical method for engaging the broader problematic of the transcendental empirical or the science of the sensible. Gilles Deleuze explains, 'Empiricism truly becomes transcendental, and aesthetics an apodictic discipline, only when we apprehend directly in the sensible that which can only be sensed.' (Deleuze 1994: 56–7) To directly apprehend indicates a manner of engagement, an effort of thought, perhaps, to restrain itself from concretion: to open to the indivisible real. In the Deleuzian universe (no less than in the Oliverosian), knowledge and truth are not derivable, representable or reducible. They are lived through, sensed. They constitute not the end of the journey or the problem, but the being of journeys and problems without end. Above all, the priority of the sensory, whether in Deleuze or Oliveros (or the other thinkers engaged here), demands the affirmation and participation of the body explicitly. It forces an approach to sensation before concepts, words or subjects and objects (these themselves dissolving into sense): an openness of sense directed and refined by practice. We are recognising the body as the centre, the middle, the in-between: the confluence of all the forces that come together in becoming.

For this undivided encounter, sense proper, we will need an idea of the sensory plenum that is itself not divided into a body on the one hand and a mind on the other, or between this composite being and the objects of its encounter, or between an object of encounter and the duration of that object, the time we perceive as immanent to it. In sound, for instance, we don't perceive a soundless time or a timeless sound. We hear a sound that endures, a sound inseparable from its duration. Duration does not exist in itself but designates the time of an event (such as a sound) that is particular to that event and not to some abstract time outside it. Crucially, this encounter of an event undivided from its time is itself indivisible from the sensory apparatus that senses it, a sensory apparatus that is neither body only nor mind only but both. We could say that this concept of an undivided being, what Oliveros calls the bodymind, is a composition of sensory spaces and memory loops positioned along the immanent threshold of sense in spacetime.

The body has different meanings, referring often to the exteriorised, territorialised, legalised, medicated, propagandised body, but also often referring to what Don Ihde calls embodied self-presence (Ihde 2007), or the body taken from within, as pure sensation. This body, the bodymind, manifests as a continuum of sensed vibration. The represented body, the one lying on a slab before a theatre of medical students, has to be considered external to thought or internal by way of images of thought, whereas the embodied body, the continuous body as a perplex of shifting sense impressions, zones and spaces, machinery and software and rhythm, a centre of confluence of a thousand modalities, structures, flows, patterns and power is not a bundle of bowels but a mobile of vibratory centers, minds, chakras. This is not to relegate the material body to the scientific image. The flesh and blood become more real, more of the essence in a

conception of being that is wide open to every aspect of itself and its variations in spacetime. There is a connection between the scale of our bodies, the lengths of our arms and legs and the timing of musical gestures, just as there is between the duration of breath and the musical phrase. The body, Oliveros tells us, gives us the universal basics of music making (Oliveros 2010). The body is the relational core of movement grounding the sensory registers, projecting its weight and ratios and durations into images (sound, light, etc.) that, thus connected, feels the pulling and pushing, the tensions and slack, the ever-changing distances and directions from image to body and back again.

Our bodies are essential to listening. Hans-Georg Gadamer points out the obvious, if often implicitly disregarded, fact that 'A tone is always a heard tone, and our hearing of it is always intrinsically involved' (Gadamer 1976: 123). The simple fact is that a disembodied sonic object has itself no way to self-produce the temporal effects and qualities and projections we hear in it with our bodies. Sound in itself is a magnum mysterium if we demand it to reveal itself in the pure energy of pressure changes. But sound referred to the immanence of the body, the immanence of memory and the immanence of spacetime is no longer this dead materiality but takes on a much more radical, artistic and profound character: sound beyond sound becomes vibration, a window of vibration that reaches into the deepest spaces, that may consist of sound or silence or something else altogether. This is why Deleuze insists that a dynamic space must be defined according to an observer (a body) tied to that space and not from an external position (Deleuze 1994). A dynamic space is distinguished from an empty abstract space because it includes time, the time populated by living bodies. It is a block of spacetime. The plentitude of what we hear, and all of our sensations for that matter, is supplemented to a profound degree by the weighed-down tactility of the fleshy body. We could go so far as to say that the sonic dimension of depth or the depth we hear in the sonic dimension, where sound no longer sounds but pulls and constricts, folds and envelops, reveals this connection. The ordinary mode of musical discourse rarely contemplates a body much less any experience or memory. This betrays the nature of sonorous experience or encounter, where a body is impacted, forces are exchanged and vast complex projections spring up. Sally Macarthur points out that the musical encounter changes the properties of listeners (Macarthur et al. 2016). Similarly, Oliveros describes listening as 'a reciprocity of energy flow; exchange of energy; sympathetic vibration …' (Oliveros 2010: 90).

Spacetime

There is no time like the present, even though some philosophers, such as Michael Dummett, deny the being of the present on the basis of St. Augustine's objection that the present cannot exist because it lacks duration: it is merely a boundary between past and future (Dummett 2004). Our concept of the present needn't founder on a concept that, in lacking duration, is specifically not of time, it only requires the self-evidence of experience. If we don't presuppose the metric character and if, with Jean-Luc Nancy, we understand present time as

> … a present in waves on a swell, not a point on a line; it is a time that opens up, that is hollowed out, that is enlarged or ramified, that envelops or separates, that becomes or is turned into a loop, that stretches out or contracts … (Nancy 2007: 13),

then there is no reason to adhere to the mathematical concept of time to affirm the present, nor to deny its spatial aspect. We inhabit a performative gap between the anticipation and execution of movement, which constitutes the pearl of spacetime that is our present tense. Henri Bergson says our present is the very materiality of our existence, '… a system of sensations and movements and nothing else' (Bergson 1990: 76), while Deleuze tells us that '… past and future do not designate instants distinct from a supposed present instant, but rather dimensions of the present itself …' (Deleuze 1994: 71).

Without the contrived technicality of Dummett and St. Augustine's objection, our intuitions of present becoming are affirmed. Indeed, there is no present if it is conceived of as an infinitesimal point between two lines. Nancy's dynamic conception of lived time affirms the multiplicity of the encounter while at the same time shifts the urgent questions to a kind of radical empirical awareness. He writes 'The sonorous present is the result of spacetime: it spreads through space, or rather it opens a space that is its own, the very spreading of resonance … this space is immediately Omni dimensional and traversate through all spaces …' (Nancy 2007: 13).

The present, released from the control of the logic of points on a line, melds past and future, time and space, thought and the body, such that these become dependent parts or tenses of a whole.

Metricised time, which undergirds Western notation, exists strictly outside the drama of sonorous sense. But experienced time, that is spacetime, is constituted of whole depths, fading into the obscurity of the chaosmos, of the ineffability that tinges or even subsumes all experience. Still, we find metricised time highly useful. The problem is that reifying the grid of metrics tends to delete the content. This is the reason that duration cannot be abstracted from that which endures[1]. It is better to tread lightly on metred space. Like the metric of a football field, when you get right down to the irregular paint on blades of grass, the grid slips back into the ideality it was from the start. The Real presupposes a smooth spacetime for the actual movement of bodies. We impose the grid, yet it never quite fully fits the actuality it is said to represent. It must be said, however, that even idealisms must find a worldly suitor, a milieu tied to the cosmos somehow. Even idealisms must submit to the conditions of the sensing body in spacetime.

Our connection to spacetime is intuited rather than calculated. Insofar as it relates to its ubiquitous derivatives, space and time, it is not abstract at all. For Oliveros, this sensory world, opened in listening, involves perceiving the entire spacetime continuum. It is the spacetime continuum that sense senses or expands into. According to her, the auditory dimension has a unique sensory contact with this continuum. Deleuze, for his part, frequently invokes the undivided continuum that is spacetime when discussing art, whether visual or acoustic, and even things like concepts and ideas. Spacetime names the time natural to the sonorous encounter.

Thought, or being, is already in spacetime, but expanded into living creatures and all their spaces and interiors. The content of thought, its continuous passing, its continuous performance, is the very dramatisation of the spacetime in which we inhere and that inheres in us. Spacetime is gathered and prolonged right along the cusp of memory in its interpenetration with the ever-advancing moment. It displays brilliantly in music, where its coherence depends on a kind of virtual memory for melodies, rhythms, gestures and ideas to resound. Spacetime accommodates multiple locations, multiple speeds and multiple levels or depths. Consciousness itself inhabits this multiplicity. We take note of the ways thought acts with itself, divides itself, reunites with itself, starting with a properly temporalised space not in mind but of the bodymind: the spacing particular to the bodymind in relation to itself. Obviously all this must be grasped from within experience but it is no less real for that.

In deferring to the being of that which can only be sensed, we open ourselves to the multitude of rhythms and multiplicity of sensations that cohere in the moment of the sonic encounter before we try to understand or measure them. The specificity of each perceptive modality radically distinguishes the orders of difference (e.g. sound versus light) while at the same time plunging deep into a well of multimodal connection, the intuition that connects everything we are to the becoming of the cosmos. The content of sensation can never be wholly abstracted from the body without destroying both. But one feature arguably characterises every material dimension of sound, be it the vivid materialities of sonic surfaces or the pale materiality of its deepest resonances, be it the radiant sensations of the gathering of temporal cycles or the great hollow depths out of which seemingly emerges my innermost vibration as if from the centre of the earth, and that is this: the individuation of spacetime as a lived, irreducible process of relationality to the world and to history, to the body and to its history and depths. We hear these processes occur temporally, as a function of our virtual memory (or consciousness) in which durations individuate and resonate together in expanding rings. Rhythm is a shared tissue between the kinetic rootedness of our bodies and the powerful currents beneath, behind, around, within sounds and beyond sounds.

Sonorous Blocks

Concepts of sound typically frame it as a thing in itself, with perception standing apart. Alternatively, a sonorous block, for Deleuze, transcends the ordinary concept of a sound. There is no stasis. There is no separation from the perceiving body. A sound, a melody perhaps, constitutes a block of spacetime. Here, ‘block’ signifies a grouping, a coalition, that protrudes or self-defines in the phenomenological sense. Its partial and dependent character immediately invokes the ear, the body, the world and the past: in short, a milieu through which it is constituted. Sounds don’t form block shapes, at least not that map onto any visual or geometric figure. Oliveros’ term is more apt: they occur as formations. They exist not as separate from a surrounding void but as intensifications within a space of hearing. Ihde correctly notes that to hear sound is to simultaneously experience it both as directional and atmospheric, that is, sounds have a local or focal intensity but take place within a global field of hearing (Ihde 2007). The ability to focus our auditory attention traces a block-milieu structure of sound (represented by Oliveros’ image of a dot in a circle), adding a free element that makes this structure detachable and mouldable.

Sonorous blocks pass. They are marked by the passage of actual and virtual becomings. The virtual aspects of sound can be thought of as those which were and those which are not yet, directly bearing on those which are now becoming, the actual. There is an immanent, always active, relation of memory here. It is through memory that the very duration of sound sounds. It is through memory that what has passed morphs into what is to come. In music, this process is heightened and intensified moment to moment. Music often features phrase-pairing, call and response, or antecedent-consequent relationships. Upon completing the first phrase (or phase), something has accrued to memory. It has a virtual non-geometric shape, an eccentric envelope. We have heard patterns, patterns that resonate with each other and in each other. There it is. What is past now stands before us ready with lines to (re)traverse, to repeat and to be enveloped in repetition.

Think of the many kinds of phenomenal, strange, beautiful and terrifying sounds that surround and penetrate us, the sound of rainstorms, of thunder, the sound of the sea, of wind, of voices, of the heart, the nervous system and of silence. Consider the immediate impact of a sound in the body to its status in virtual memory a moment later. Imagine the smooth lines of rhythm, not sounded but felt as waves in the body, flowing into the past and the future, returning as virtual images, phrases to be completed, scales to be resolved, gestures of the melodic voice to be figured and refigured. Or beneath what we perceive as the sound's surface, which turns out to be not one thing but a composition of many dimensions spanning multiple temporal levels and depths. Consider the worlds of musical instruments and digital synthesis techniques. Consider the spacetime of their articulation, which includes the profound resonator of the body at its centre. The sound image spreads through its own space, reaching all around one as well as resounding in the reflective interior space deep in one's own body. Its spatio-temporal presence is at once intense and overwhelming and yet impossible to pin down using our ordinary conceptions of space or time.

Abstraction truly is a perilous proposition with sounds, which individuate as radiant centres of varying densities without enclosure, with one end resounding right in the centre of one's head. There is no metric, no measuring tool, no geometry that could straddle such a spacing, a spacing that starts out there and ends in here with no noticeable break in between. Nancy makes clear that it is precisely from emission to reception that a sound, sounds (Nancy 2007). The ordinary mode of engaging with and representing music proceeds at one degree (at least) of removal from the actual experience. It contemplates a space with no time, that which what results from being defined from the external position Deleuze warns about. We discover, in experience, that a sound protrudes from a world of sound and intrudes the body, itself an extension of the world. Distinguishing these aspects comes down to a generalised orientation or focus, an act that follows the contours of the Real without separating and reifying subjects and objects.

Carolyn Abbate observes that sound is both crudely material and '*cosa mentale*,' a thing of the mind (Jankelevich 2003). This is true but is taken from outside. From inside experience, the mental image and the extended sound are one image, albeit one with great complexity and depth. This is where we confront a fundamental threshold, where representation must be abandoned. However inconsistent, strange and ineffable sound might be, the Deleuzian-Oliverosian task is to place ourselves in and to relate our concepts to this profound encounter with the true mixture that is our perceptive state. Bergson helps us here. Our true perception of things is always mixed. There is never a naïve state, that is, perception without a body or memory. Matter, whether disclosed in sonorous or visual or tactile images, is something in between what a realist calls a thing and an idealist calls a representation (Bergson 1990). It is this mixture that is prolonged in the experience of sound, a mixture of perceived sound and the duration we project into it, a duration that is extracted from our own embodied presence in spacetime. At its most basic formulation, we might say that a sound is a manner of individuation of the spacetime that fills it and that surrounds it and that this spacetime is enveloped by memory that itself individuates spacetime.

Individuating Milieus

> '…rhythm and milieu are the slowing down, the provisional formalization of elements of chaos: a milieu, the congealing of a block of spacetime, and a rhythm, the emergence of periodicity, are not separable from (a) block of emergent territoriality.' Elizabeth Grosz (2008)

Deleuze might ask us what our relationship is to 'all the different milieus we can perceive at once' and still be asking a very similar question to that of Oliveros. Milieus are defined rhythmically: they are perceived as rhythms, rhythmed spaces, or rhythmicised fields of contrast. The spacetime of listening, even minus any quasi-detatched blocks (sounds), is such a milieu. It is pre-individual. Individuation provides a useful concept for denoting the items that populate the listening milieu. As a metaphysical concept, it locates an ever-moving boundary between those things that differentiate for us and the conditions under which this differentiation occurs, which is to say a conception of thingness that is neither a thing nor a space of things but is rather a process that involves the spacetime of experience including the presence of a body. Individuation entails spacetime. It situates a parcel of motion, or spacetime block within a larger spacetime milieu or territory. In music and sound, individuation is always passing: there are no fully determined, fixed and constituted individuals in sound or music but rather processes of continuous individuation.

The concepts of individuation and pre-individual milieus affords us a heuristic for radical encounter. Explaining Gilbert Simondon's work on individuation, Muriel Combes informs us that individuation 'replaces notions of substance, form, and matter with more fundamental notions of primary information, internal resonance, potential energy, and orders of magnitude' (Combes 2012: 5). These more fundamental notions traverse the categories that would separate a listening body from a sound and the spacetime interior and exterior to each: what is invoked when we denote the radical encounter of sonorous sense. As I've argued, listening takes place within a spacetime articulated into zones and depths and qualities. Oliveros retraces the spacetime of listening very much the way Ihde does, as an immersive, intensive space characterised by a globular receding horizon and in which, to channel Deleuze's concept, sonic events are individuated while remaining attached as a condition of individuation. The critical relation here is between this globular spacetime, what individuates within it, and the active presence of the body. Ihde describes the intensive spherical massing of the spacetime of hearing within which we are positioned, the horizon being indefinite (Ihde 2007).

In her book on the incorporeal, Elizabeth Grosz treats individuation extensively, charting the evolution of the concept through Deleuze and Simondon. She asserts '… there is no individuation without an individuating milieu' (Grosz 2017: 176). The milieu that constitutes auditory spacetime stretches in every direction from the body, with all events relating at once to themselves, their spacetime around and in the body and to the body itself. Any sound that occurs here will belong to the entire system, will sound and resound, distributed by and in this system. Combes explains that to look at a phenomenon in terms of its individuation is to look at it from the angle of the underlying and surrounding processes that are part of its genesis, making it what it is (Combes 2012). The field attended to as a whole, which Oliveros calls global attention, teems with 'overlapping dimensions created by sounds' (Oliveros 2005: 15).

The spacetime that constitutes the pre-individual milieu of hearing is individuated both globally and focally (our awareness is challenged to trace these directions simultaneously) where a sound becomes partially separable from the field as a whole by virtue of the biophysical differentiation between direct and reverberant energy. The temporal gap between direct and reverberant energy produces the possibility of the accumulation of a discrete duration for a (now) discrete object, leading to what is perceived as a separate sound, separate by its amassing of duration, borrowed in a profound sense from the surrounding spacetime milieu of hearing. The partial protruding character of sound means we cannot truly attend to sounds in themselves, free of context, atmosphere or a listening body, a problem generally unacknowledged in music studies. What individuates within a milieu nevertheless remains joined with it, as ocean waves individuate within a milieu of the sea.

A sonic milieu, which is to say, a field of individuating sounds, is a spacetime constituted by reverberation in the vicinity of a body, while individuating temporal objects cut through the atmosphere of their own past. Deleuze understands the milieu as a profound vibratory field, 'a block of space-time constituted by the periodic repetition of the component' (Deleuze and Guattari 1987: 313). This is to say that there are local blocks that sound within global ones. When speaking of spacetime blocks, we mean items standing out from the field of hearing while remaining attached in reciprocal determination. The concept of individuation removes the presupposed thingness of the thing so that our thinking remains planted in the Real. We return again and again to this field, and ask our concepts to do the same.

Conclusion

Aesthetic individuation involves the individuation of lived spacetime, nowhere more so than in music where spacetime is individuated into the thick flow of rhythms that come alive for us in listening. We could go as far to say that life itself is a variation on and an expansion of the spacetime in which we dwell. One key feature of spacetime would have to be a coexistence of a multiplicity, a future and a past both immanent to an unfolding present, all this in the engagement with and in the presence of a body. The instantaneous present is deferred into a bubble of indeterminacy, a thick now, full of time as it were. Individuating sounds protrude from the spacetime milieu of auditory sense such that there is no absolute determination, no absolute concretion, but only a partial, conditional, emergent multiplicity. We are questioning the status of systems of representation that tell us tones are durationless points in metred space, or that metre is some uniform measure of time, fixed, external, sideways, absolute and abstract, in favour of the embodied encounter, the being of sense[2].

When analysing experienced sound, Oliveros tells us to focus both on a sound that individuates within the field as well as the individuation of the entire field as a whole. The point is to follow the configuration of the sonorous encounter in all its complexity: a sonorous figure (a spacetime block), a global spacetime of listening, a body. We want to account for sound, the spacetime of sound, and the body, not in order to contemplate abstractly so much as to give the coordinates of our own encounter, to position ourselves, our thought, within this field. We must try and imagine thoughts passing through atoms, surfaces exposing depths, all the scales and orders of difference at once rhythmising their differences together.

Which brings us back to Oliveros' original question: just what is our relationship to all the rhythms we can perceive at once? What is one's relationship to the tides and seasons, to the rhythms of movement and song, to the rhythm of one's breath and even one's own heart? I believe that an earnest pursuit of this question, foregrounding the being of that which can only be sensed, results in finding only rhythms upon rhythms, and a confluence or center of it all – an ocean of rhythms, all of it constituting a field of becoming centered at a body which itself is composed of nothing but rhythm

1. Although duration does not abstract properly from events, we can say that duration is virtually extractible in the projections of musical time but such extraction never appears nakedly: it embeds itself in what is ongoing sound.
2. Western notation is subject to this critique insofar as it forms the ground for abstract reductions and calculations. Otherwise, it is a useful and necessary tool for dissemination and pedagogy.

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ABSTRACT

This paper investigates spacetime and auditory sense in the context of the American composer and sound artist Pauline Oliveros and that of French philosopher Gilles Deleuze. For both thinkers a radical empirical engagement with sensation produces a suite of concepts foreground the immanence of experience, in particular, the radical particularity of embodied encounter between bodies, spaces, and sonic events. Building the structure of encounter through primarily Deleuzian terms, disrupting sedentary binaries, affirming a sense prior to language, and tracing the conditions of sonorous becoming, a concept emerges of the spacetime of sense and sensory objects released from the control of the mediation of the Western Image of Thought.

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