

PERCEPTUAL INFORMATION OR INFORMED PERCEPTION? SYNESTHESIA AND SOUND-ART

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Introduction

Marshall McLuhan (1994) attributes to sound an inherent potential for immersive dissolution and psychic integration and credits sonic, oral primitive cultures with prefiguring the 20th century 'electronic implosion'.

McLuhan, in a discussion of the Radio argues,

"Radio affects most people intimately, person-to-person, offering a world of unspoken communication between writer-speaker and the listener. That is the immediate aspect of radio...a private experience. The subliminal depths of radio are charged with the resonating echoes of tribal horns and antique drums. This is inherent in the very nature of this medium, with its power to turn the psyche and society into a single echo chamber...Radio provided the first massive experience of electronic implosion, that reversal of the entire direction and meaning of literate Western civilization"(McLuhan, 1994, p. 331).

This anticipates McLuhan's subsequent observation on a critical blindness to the radical effects of perceptual technologies:

"The power of radio to retribalize mankind, it's almost instant reversal of individualism into collectivism, Fascist or Marxist, has gone unnoticed. So extraordinary is this unawareness that it is what needs to be explained. The transforming power of media is easy to explain, but the ignoring of this power is not at all easy to explain. It goes without saying that the universal ignoring of the psychic action of technology bespeaks some inherent function, some essential numbing of consciousness such as occurs under stress and shock conditions." (p. 336).

I argue that the "numbing" of consciousness in a stereo-sonic context where the auditory self is inundated in and saturated with multi-pronged and multi-directional sonic flow sets the stage for a new sonic inter-subjectivity. Exploring this is among the principal interests of this paper.

Auditory versus Visual Cognition

It is instructive to reflect on some of the fundamental affordances and functionalities of the sonic medium when counterpoised against corresponding visual modalities. The visual dynamic perpetuates the Cartesian tradition of defining the self whereby the bodily boundaries of the subject non-critically coincide with the cognitive/discursive notion of the self. This ethic of self-definition dispenses with all modes of critical self-making not premised on visceral boundaries. As the latest Virtual Re-

Abstract:

Immersive sonic environments raise important questions regarding the nature and limits of human cognition. The inundation of the human in multi-directional, immersive sonic flows activates a new register of acoustical cognition which simultaneously engenders a new aesthetic way of encountering and experiencing sound. This paper seeks to investigate the composite positionality of sound often exploited by contemporary sound-artists. It elaborates on at least three distinctive onto-epistemological states that are simultaneously assumed by the sonic medium in certain immersive works of sonic art – sound as a tropological-discursive construct, sound as an event enabling the visualization of time and sound as a physical wave-object existing in space. The paper tries to approach the synesthetic possibilities inaugurated by the aforementioned spatialization of time in sound within conflicting discursive paradigms while also probing further implications of the ontological multiplicity of sound. It seeks to explore the dynamics of sonic synesthesia using a neuro-anatomical approach to synesthetic cognition that posit synesthetic experience as a mirror to neural cross-linkages.

Keywords: sonic-immersion, synesthesia, tropology, cognitive science, neuro-aesthetics

ality (VR) technology aspires to a hitherto unmatched degree of not only photorealism but sensory realism at large, one notes a countervailing tendency while approaching the question of sensory saturation premised on a sonic aesthetic epistemology. The mainstay of sonic cognition is inextricably aligned with a quest for the sound-source, the lone visible reference to external reality native to sonic aesthetics. I contend that this fetish for the source or even the inadvertent search for roots that is typical of sonic cognition enacts a gestural compensation for the lack of realistic verisimilitude integral to other cognitive media like the visual or literary media. The visual register and the written word function by referring to a reality external to themselves which structurally duplicates the logic of the “colonial gaze” by appropriating images within the frontiers of semiotic signification. However, sonic cognition does not replicate external reality. Instead its functionality is contextual, transient and contingent and is exclusively within the media ecology that it animates.

There exist at least two evident objections to the aforementioned insulated character of the sonic medium. Sound, as mentioned before, is potentially cognized via the source it is linked to which complicates its self-enclosed and self-sustaining stance. Further, in the discursive realm, sound operates on the basis of what one could term its evocative or associative potential. Memories, dreams or imaginary vistas are frequently colored or framed by sonic input(s). Alternatively, a characteristic sound could evoke or conjure previously experienced subjectivities by its associative or referential capacity. The philosopher Jean Luc Nancy states, “[T]o hear a siren, a bird, or a drum is already each time to understand at least the rough outline of a situation, a context if not a text.” (Nancy, 2007, p. 1). This conceptualization of sonic information aligns itself with the dominant function of sound as an indexical reality or as permeated with the possibility of inaugurating alternative subjectivities through its associative potential. I will outline here a significant distinction between the dynamics of sonic and typographical/visual cognition which in my view lacks rigorous theorization in sound studies. Sonic cognition is strictly and inevitably semiotic whereas, the semioticity of visual/literary cognition is over-determined by semanticity. In other words, the human mind can process a single visual frame or a written word at an instant whereas, when it comes to sonic cognition, simultaneous lines of autonomous melody are commonplace even in classical orchestral music. Since sound works on the logic of self-signification unlike the visual as previously mentioned, sonic flows can create a mesh of inter-relational and interactivity within which the auditory subject is embedded or immersed. It achieves this end by generating what one could term a frequency-space which could have productive implications for creating what could be called possible virtual worlds in the real world. An ethic and aesthetic mode radically divorced from current trends in VR that are generally based on a visual rhetoric of the auditory buttresses and serves to enhance the photorealism of the visual. This discussion will be pursued in a subsequent section of this paper.

The onslaught of electronically and digitally manufactured sonic ecologies with their ever-increasing avenues of sonic-hybridization, unmoored from the bounds of medium-integrity and materiality, unleash a radical potential for sonic epistemologies. A cognitive nomadism of sorts underlines the globalised transnational psycho-geography which marks modern existence. Sounds now embody a condition of perpetual exile, constitutively alienated and irreducibly deferred from their cultural, discursive and material footholds. I locate the shift in the cognitive experience in the volatile discursive domain of the politico-aesthetic.

Sonic Aesthetics and the Epistemological Question

This paper is, among other things, interested in understanding a rehashing of the political that an overhaul in aesthetic cognition ushers. The most obvious transition that marks this new sonic aesthetic of transience and un-belonging is an altered conceptualization of epistemology with a concomitant shift in the question of value associated with knowledge-production. If the dominant ideology has hitherto leveraged a utilitarian character of knowledge production, this new acoustemic approach

veers towards a knowledge economy or ecology prioritizing affect sensation, proprioception and contingency. The locational unmooring of sound inaugurates a new cognitive plane of what could be termed phenomenological acoustemology. The visible shift from the traditional paradigm of discursive sound to phenomenological listening is the change in the conception of sound. This is a change from sound as a material emanation integrally tied to an objective source to sound as sound. This re-conceptualization of the sonic facilitates a detour around traditional understandings of sonic cognition. The association of sonic phenomena with material objects implicates an inevitable perceptual delay – an ontological ‘gap’ between the hearer and the heard, framed by an ideological meta-position characteristic of visual reception. Salome Voegelin (2010) theorizes this phenomenon aptly:

“...the auditory is generated in the listening practice: in listening I am in sound, there can be no gap between the heard and hearing, I either hear it or I don't, and what I perceive is what I hear. I can perceive a distance but that is a heard distance. The distance is what I hear here, not over-there. It does not signal a separation of objects or events but is the separation as perceived phenomenon.”(p. 5).

The strategic gain related to this brand of sonic thinking is the integration of the material distance within the aesthetic apparatus. An ocular-centric ideology regards the distance punctuating the viewer and the viewed as proffering a meta-position for a rational critical gaze. In sonic thinking, however, this critical distance is always already part of sonic flows through which it is also made visible. This ultimately points towards an intrinsically immersive character of sound. A new form of subjectivity produced in and by sound is born where the aesthetic subject is generated and in turn generates the auditory event. In sound studies, scholars like Rick Altman (1992) have problematized the ontological self-presence of sound. Altman posits, “ Sound is not actualized until it reaches the ear of the hearer, which translates molecular movement into the sensation of sound” (p.19). This line of understanding draws on a paradigm which situates the identity of sound at the crossroads of ontology and epistemology. The ontology of sound as an entity in excess of and qualitatively different from its material wave substrate is sanctioned by the epistemological cognition of sound as sound itself. This ontological duality creates interesting affordances and possibilities for an expanded conceptualization of synesthesia which is realized in and through sound – especially stereo or multi-channel sonic flows. This sits well with the idea of sonic inter-subjectivity that constitutes one of the principal propositions of this paper with which I will now engage.

The Self in/as Sound

The idea of a sonic reality evokes a set of dynamics potentially distinct from the rhetoric of conventional VR which prioritizes visibility premised on its Cartesian dynamics. It is based on an active inter-subjectivity where the sonic as sonic is brought into existence inter-subjectively by the act of listening. However, on a reciprocal modality the sonic lifeworld teases out the phenomenological-listening-self which adds a contingent, processual dimension to the well-formed discursive subject of visibility. A sonic reality devoid of visibility suspends rational selfhood by dissolving it and focuses the disintegrated non-self onto the apparatus of the heard. This dissolution of the rational self is arguably impossible in visual immersive realities because visibility is ontologically tied to narrativity or semanticity. The sonic reality which on the one hand is the realm of the pure presence of semiotic form and on the other hand simultaneously devoid of objective or discursive identity-poised on the ontological uncertainty between semiotics and phenomenology- can comfortably produce the listening entity. This is not the ‘human subject’ of Enlightenment rationality but a sonified subject reduced to the sensory-motor perception of listening. The rational perceiving subject provides the substrate which alchemically becomes the perceptual listening entity in the virtual sonic reality. This modified conception of virtuality literalizes David Lewis’s proposal of a “possible world” which he speculatively offers

as a world divorced from indexical reality (as cited in Voegelin, 2010, p. 152). The mutual production of the sonic lifeworld and the listener-as-subject at a moment of inter-subjective reciprocity holds out the promise of a Lewis-ian "possible world" on a conceptual plane that is radically distinct from anything potentially realizable by conventional VR.

The sonic life-world activates a new register of immersive experience – an immersion born not of the narrative thrall of VR where the logic of the visual narrative subordinates the entire array of perceptual and sensual experience rendering the participant devoid of critical detachment. Though sonic reality saturates the listener with perceptual input, it writes into the listener a new domain of criticality. As immersion is freed from the logic of the narrative in favor of a transient randomness, the idea of what I would term an acoustemological critique emerges. This brand of critique is freed from the constraints of discourse and is realized out of cognitive dissonance resulting in a contingent linguistic idiom organically engendered by the symbiotic aesthetic of the listener and the environment. Salome Voegelin (2010) refers to a similar idea in passing,

"The aesthetic fantasy thus produced, however, is as transient as the work, and includes the dimensions of the aesthetic subject within its articulation. This agent produces an aesthetic discourse out of language suspended over the chasm between phenomenological experience and its semiotic articulation, that, up in the air, offers itself to communication in moments of coincidence: fleeting instances of understanding in the midst of misunderstandings between those involved in the discussion of the work."(p. 152).

This level of critique is not discursive and appropriative unlike rationalist idioms of critiquing but rooted in an ontological empathy for its subject, perpetually suspended in a struggle with rational empirical criticality to draw out its blind spots and its moments of un-mindfulness.

Stereosonicity and Synesthesia

The rhetoric of depth and directionality that regularly colors discourses on stereo-sonic phenomena draws on the conceptual-metaphorical register of visuality. The metaphor theorists Lakoff and Johnson (1980) propose a useful scheme of 'conceptual metaphors' which is essential to understanding the synesthetic dynamic of stereo and directional sound. The directionality of stereo sound is a case in point, where a difference in intensity distribution of a sonic frequency across a spatial domain is conceptualized as a directional character of sound. The sense of direction originally stems from a change in the spatial/visual co-ordinates or location of a physical object. However, directionality in the sonic parlance technically refers to differential frequency intensities in space. This is one of the innumerable instances where the conceptual domain of the visual (denoted by (change in) positionality) is mapped onto the domain of the auditory ('sonic directionality'), in the process writing a radically new dimension into the sonic. The introduction of the visual register to the conceptualization of the sonic domain invests sound with an excess of possibilities and a newfound materiality, as it were. The ephemeral, transient and permeable nature of sound is informed by a materiality that is distinct from the physicality of its vibrational wave-form– a materiality premised on the density distribution of sound across space. This is not a materiality of pure presence but one made visible by its relationality and differential cognition.

This paper posits an extended definition of synesthesia which accommodates cross conceptual mappings such as the one previously described. With this instance, it is not a literal/linguistic crossover across distinct sense perceptions but a conceptual cross-domain mapping between the ocular and the auditory which evokes incidental resonances with the haptic (by tangentially hitting a new materiality of sound). Useful to the discussion of this expanded idea of synesthesia is Salome Voegelin's theorization of what she terms "timespace" in sonic art and environments. Voegelin states,

"The sonic sensibility established in relation to noise and silence resounds space in time and time in space.- Its tendential language, which, in the practical tendency of speech comes to the thing it describes thinging itself, meets the thing of space in the place of the thing of the time of its generative perception. This speech is not built on time and space as a dialectical baseline but evokes time and space continuously as they emerge out of sound: local and momentary." (p. 123).

At another point in her discussion she states,

"listening hears space as sonic dynamics and produces a reciprocal time that is full of thickset materiality, and both are mutually generated rather than separately constituted...Timespace is time and space as verb, as thing thinging. It does not describe a place and neither is it a place, it is neither adjective nor noun. Instead, it is the site of production of the sound that sounds its motion as an invisible dynamic through which I hear place. In this sense timespace is the site of sound as verb that produces geography from the mapping of our auditory imagination and grants it a provisional authority in the conviction of our urgent perception." (p. 211).

The synesthetic organicity of perceiving one modality through another arguably introduces a different register of immersive cognition. This is not only at a cognitive level but also at an embodied level if synesthetic cognition is approached via neural-metaphorical theory.

The Neuroaesthetic Dimension

The idea of a provisional time and space "emerge[ing] out of sound" (Voegelin, 2010, p. 123) is singularly interesting as a synesthetic (in the expanded sense) conceptualization of temporality and spatiality employing the auditory domain. Traditionally, the constructs of time and space are regarded as fundamentally abstract constructs which afford the realization of phenomena at their intersection. If time and space are materialized through a sonic dimension, on the one hand it posits sound as an entity sensually bridging time, space and the human subject. However, more importantly for the purpose of this argument, it proposes the sonic as temporal and spatial. Thus the auditory domain is simultaneously re-conceptualized and re-invested with a temporal and spatial imagination. Alternatively, ideal/mental time which is abstract is sensorily imaged in the sonic event. Such iterations foreground the sonic, reduced to its durational and material nature on the surface level. However, what complicates this superficial idea of metaphoricity, are the theoretical advances in the neural study of metaphor and language. One of the arguments this line of research espouses is that a perceptual object/stimulus would activate several sensory-neural pathways simultaneously which would in turn activate and be integrated within the 'multisensory integration sites' of the brain (Callan et al., 2004, p. 805-16). The structural similarities between synaesthesia in language (as metaphor) versus synesthetic mechanisms in human perceptual systems are worth probing. V.S Ramachandran and E.M Hubbard posit that the cross-modal employment that characterizes synesthetic metaphors are not arbitrary but rooted in "constraints imposed by evolution and by neural hardware"(Ramachandran and Hubbard, 2003, p. 51). If, for example, the smell of a mango is considered sweet metaphorically (sweet is originally a gustatory/taste-related adjective), it is because there are neural linkages between smell and taste. According to Ramachandran and Hubbard, "the brain pathways for smell and taste are closely intermingled and project to the same parts of the frontal cortex." (p. 52) Hence, in this scheme, the cross-sensory inductions that characterize both synesthetic language as well as synesthetic experience are rooted in the dynamics of perception and reflect hard-wired configurations of perceptual systems.

Revisiting Salome Voegelin's 'Timespace'

In the current context of sonic cognition, it might be rewarding to examine Voegelin's understanding of 'time-space' in sonic acoustemology using the neural theory of metaphorical synesthesia. In this case however, it is not a cross-modality between different sense perceptions (e.g.: sight and sound), rather it is between abstract intellectual constructs namely time and space and the auditory imagination. This involves what George Lakoff (2008) calls "embodiment and simulation semantics"(p. 18). Lakoff cites Jerome Feldman's (as cited in Lakoff,2008, p. 19) hypothesis which states that certain cognitive acts trigger a cascade of mirror neurons which fire mental representations across another linked conceptual domain or a neural network that is in physical proximity with the one activated by the cognitive trigger¹. I argue that the conceptualization of 'timespace' based on a sonic sensibility could be understood using a similar approach. Sustained exposure to conflicting sonic flows when perceived as a durational event (in the absence of a narrative/semantic context) fires a neural-synaptic network associated with the mental representation/concept of time. When perceived as a network thickset with sonic materiality fires a corresponding synaptic representation of the concept of space.

On further contemplation, Voegelin's (2010) line ("The sonic sensibility established in relation to noise and silence re-sounds space in time and time in space."(p. 123)) is charged with an extensive ramification of Feldham's neural theory. When the condition of silence is approached through a sonic aesthetic as has been common in works like John Cage's '4'33", I posit that the neural linkages are activated not only in a bi-directional sense between time and sound or space and sound, but a cognitive triad is activated with the sonic context as the neural substrate. Lakoff (2008) notes that the most effective and naturalized neural connections occur when the conceptual domains are not only linked but also form conceptual blends which are evidenced by neural-bindings. "Neural binding," notes Lakoff, "is responsible for two or more different conceptual or perceptual entities being considered a single entity [in context]." (p. 20) Furthermore, the concept of a gestalt-circuit is particularly useful for the bridging of the timespace concept in sound. Lakoff defines the gestalt circuit as comprising multiple neural circuits having a single gestalt node in common. If this is triggered, it would activate all the circuits it is part of even if individual components of the circuits have not been activated separately (p. 21). In the timespace example, the sonic neural circuitry enacts the role of the gestalt node which simultaneously links and routes the spatial neural domain to the temporal and vice-versa in a feedback loop. This in turn engenders the cognitive phenomenon of the sounding of time in space and vice-versa. This embodied neural approach to synesthesia imparts rigor to the project of theorizing cognition (in this case, 'timespace') whereby abstract theorizations are endowed with an embodied neural dimension and are redeemed from charges of irresponsible interpretative or metaphorical fantasizing.

Conclusion-Towards a Theory of Sonic Tropes

In conclusion, I would like to problematize the brand of acoustemic knowledge freed from the constraints of discursive rationalist thought that the paper has advocated till this point. The theorist Hayden White's development of the classical theory of tropes and his idea of emplotment³ in historiography seems to me to be particularly apt to providing a leeway into this area. White (1973) identifies two broad stages that precede the writing of history. The first stage is prefigurative, precognitive and precritical in the economy of the historian's consciousness, as White puts it (p. 31). This is the stage where the historian cognizes the historical field and constitutes it as a perceptual object. In other words, the field is first cognized in terms of discernible elements before the interpretive stage consisting of recognition of codes, orders and generic relations begins. Such pre-figuring of the field, according to White, is premised upon the linguistic tropes of metaphor, metonymy, irony and synecdoche.

This pre-figurative and precognitive stage, according to White, is fundamental to creating the conceptual apparatus and frame through which the historical field will be surveyed and even to identify the objects of analysis from the field, which will undergo subsequent interpretation. If translated into sonic cognition, the conceptualization of a similar pre-cognitive and pre-figurative stage is predicated on sonic equivalents of the linguistic tropes proposed by White. Needless to say, White's classification of the precognitive, linguistic field would undergo a very different kind of classificatory modality if reconceived in musical terms, since sound is devoid of the potential to signify what is typical/characteristic of the literary medium. These tropes could be reckoned forth through diverse factors in the sonic environment ranging from timbre, texture, and tone to the critical location of the listener. For example, a certain set of sounds assume a comic or ironic overtone (due to the timbre of) could be conceptualized as different components of the tropological cast through which the sonic field is cognized. The subjective element involved in locating a specific sonic field within the matrix of available tropes is hard to be overlooked. This cognitive act, cast in a certain tropological mould, subtly shapes the choice of the very elements of the sonic field which qualify as objects of interpretation and cognition. This precognitive classification at best sets up a dialectical interaction between discursive subjectivity and the acoustemic subject formed in sound and at worst annuls the very possibility of a sonically produced subjectivity and thus, the idea of pre-discursive criticality.

Endotes

¹ For a detailed study of this, look at Feldman's book: Feldman, J. (2006). *From molecule to metaphor*. Cambridge, MA: Bradford MIT Press.

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