The impossibility of absolute spatial determinations: from Luigi Nono and Salvatore Sciarrino's musical aesthetics to Giordano Bruno's innumerable worlds.

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Abstract: This paper discusses two works, Luigi Nono's Verso Prometeo (1984) and Salvatore Sciarrino's Lohengrin (1982-4), by reference to Giordano Bruno's cosmology. Bruno broke free of the medieval conception of the world as closed, hierarchical, anthropocentric, and with the earth at its center, to describe a limitless universe, with neither center nor circumference, consisting in an infinity of worlds inhabited by other living species, without hierarchies between them. Similarly Nono's and Sciarrino's works depart from a scripted, denotative, concept of the musical sound and from traditional, hierarchical views of performance conditions and the relationship between composer, performers, and audience. This is achieved through an "ecology of listening" (Sciarrino's phrase), which tests the limits of the sound/silence opposition; by relying on electro-acoustic technology; and by looking for new spaces allowing for infinite listening possibilities.

Introduction

To analyze a musical system according to purely musical criteria, without recourse to philosophical, artistic, or psychological or physiological symbols, patent or latent, that pertain to it, would be tantamount to not taking into account the potentialities of the musical composition or its "power of fertilization."§

The infinite is, in fact, present in every aspect of the musical compositions of the two artists: from the conception of a sound that "reveals and articulates the space and makes it resonate," to its non-linear, but rather multidirectional, multiple dissemination; to the transformation of the
sound with multiple possibilities of modifications in real time; to the perception of a multiple, multidirectional sound, conducive to infinite listening possibilities. This concept of the infinite is not simply linked to the musical philosophy of the two composers; it also belongs to "our life, intimate, inner [as well as] outer, ambient, a vibrant pulsation listening in multiple ways to multiple acoustics: continuous-discontinuous-audible-inaudible-depth of distance, echoes, and memories; natures, fragments, moments; subterranean, sideral, random, without end.\textsuperscript{viii}

The aesthetic pregnancy of the sound is actually based on its effect on our mental and affective receptivity: the sound, inevitably, compromises us affectively. Or rather, as it compromises us, it allows us, through the listening process as well, to be put in a state of inner conversation.

Prometeo and Lohengrin are musical translations of a sense of permanent uneasiness, a poetics of fragmentation and dislocation. Through a language of total reification,\textsuperscript{x} the myth is rediscovered and rewritten, translated into a drama of sound by two composers who no longer depict the virtues of the supernormal man, but the feeling of anxiety and fear of otherness, of a constant discovery of the unknown, of a perennial quest for the infinite, that is common to all human beings. The same quest can be found in Giordano Bruno's theory of an infinitely extended cosmos,\textsuperscript{v} unlimited, without absolute center nor circumference (any point having the capacity to be indifferently center and circumference):\textsuperscript{vi} an infinite space above which there exists a "cause" or supreme power, a mens super omnia, from which the entire universe proceeds, but which remains unattainable and inexpressible by the umana ratio.

Perception and listening

The "patient exegesis"\textsuperscript{vii} of the myth, in both works, does not have as its ultimate goal the construction of a morality but rather a reflection, at once individual and choral, on the "I" and the "I" of others, within a relation that can only exist in the act of listening. This focus on listening, seen as "philosophy of the possible,\textsuperscript{viii} is strongly articulated both in Nono's conception of the sound and in Sciarrino's concept of an "ecology of listening."

According to Nono, "perception and listening have the power to free the ears from monodirectional, sight-dominated, selective habits" (or ritual ones);\textsuperscript{ix} similarly, for Sciarrino, "it is necessary to free the ear from incrustations, repair it, rescue it from deafening".\textsuperscript{x}

The ecology of listening, in a maieutic perspective, shows the way in which "all of us can manage to cleanse our minds";\textsuperscript{xii} to learn "to create a vacuum inside us, to leave our space for another space we do not know";\textsuperscript{xii} similarly, Nono's philosophy of perception "supposes" an openness to others and a reevaluation of subjectivity. This form of experimental listening takes the form of a sort of journey to an "elsewhere,"\textsuperscript{xxii} as an "entrance into an unknown territory",\textsuperscript{xxiv} it can be described, in Nono's case, as a "tragic" ritual (or tragedy), or, in Sciarrino's, as an "ecological" ritual (or plan) – and in both cases as a form of collective communication and the individual translation of a message.

Each individual, in his psychological and bodily experience, possesses an elemental sound structure, which not only makes it possible to react to the world of sounds but also to identify them. By freeing unconscious energies (or "ecological" sounds) that surface in a conscious, total way during Sciarrino's sound itinerary and/or Nono's tragedy, listeners get closer to the insight or profound knowledge of what used to and continues to be alive in them.\textsuperscript{xv} Sciarrino's idea is that through the transformation of the listening experience into images, anyone can transmute the aesthetic experience into a form of knowledge, both of the self and of the surrounding world; similarly, for Nono, the aesthetic experience of the composer/performer/listener should lead one, through the use of silence, to listening to one's "outer self." In this sense music becomes, or rather is, a way of becoming aware and conscious of another reality; a way of returning to the "ground zero" of sensory experience, to a perception free from "the deforming glass produced by the sedimentation of experience and knowledge foreign to the object."\textsuperscript{xxvi} By reawakening in us the sensitivity to the infinite difference
and attention to the “référence constitutrice” (inherent reference) of the other and others, we can set forth, to quote Nono’s title, towards infinite impossibilities: *Towards Prometheus.* Infinite spaciality and infinite difference are also the emblematic codes of Bruno's theories. His vast cosmological imagination revolves, in fact, on two key concepts: the infinite universe and the presence in it of innumerable worlds.

The absence of the center of the world (like the absence, in these two works, of a performance center) implies the impossibility to determine spatial absolutes. (In both musical solutions one will always and only see part of the totality. It will be possible to perceive the totality only and potentially “by gathering with our senses the effects of causes invisible to us.”)

This feeling of cosmic infinity, to paraphrase Bruno, does not exclude, but rather implies, the idea of other infinite worlds, consisting of the same elements, albeit in varying quantities and different constitutive relations, all of them irradiating light and subject to the universal law of the union of contraries.

The infinite is present in the listening possibilities to which the works in question open themselves, in a quality of material that is at the limit of the inaudible, yet is never the real equivalent of silence in a realistic sense.

**Reduction of listening and archetype**

The evacuation of meaning induced by the “reduction” of listening to its essentials in *Prometeo* and *Lohengrin* allows us to explore zones of perception hitherto inaccessible to us as a result of the banalization of external appearances induced by habits, and to explore, within our unconscious, the lost experience, to the point where we can make it reemerge in the sphere of art, where it becomes language.

By giving a voice, paradoxically, to anamnesis (the return of powerful entities hidden in our unconscious), the reduction of listening contributes to the emergence of phenomena over-determined in the artistic composition. That is because the first degree of perception, which suspends all judgment and all attribution of meaning, allows for the emergence of an entity rich in “subterranean” determinations and for the appearance, in the artistic creation, of a common denominator to superficial meanings: the archetype.

A richly evocative figure abundantly used by both composers, the archetype has the power to confer a great dramatic force to the musical discourse since it is articulated on the three fundamental axes of the production and reception of the work of art: causality, hierarchy, and repetition/transformation. In silence, or in a sound bordering on the inaudible, we can identify the archetype common to *Lohengrin* and to *Prometeo*. Inserted within a dense net of relations, it is an important element of the discursive framework, a reactive element between the dialectics of tension and relaxation, on the one hand, and of the contraction and dilatation of time on the other. Interrupting the process of denotative reference (mimesis), the sound-silence (also called “zero sound” in Sciarrino’s compositional poetics) allows for the construction of a process of references towards transcendental reality or towards the ontological archetype, to borrow Stéphane Roy’s classification. The presence of sounds as objects of the denotative potential makes it possible to evoke other universes of significations of which it appears that the composer, let alone the listener, is not always aware.

Arguably, the two composers use the “sound-silence” as a kind of “Trojan horse” in order to invade, at the moment of realization of the compositional project, the universe of imagination inaccessible to the simple denotative process. In that sense, the common archetype becomes the inaudible, which cannot not express itself directly, and which listeners can only evoke though a constant quest for meanings and contextualizations based on their own ontological experience.

**From listening space to infinite listening possibilities**

Rejecting the idea of a performance space in the traditional sense, both composers
identify a space-site that frees listening from the slavery of sight and from the classical/optical dimension. A space that articulates in multiple ways the dissemination and direction of the sound, in order to turn it into a creative component. A space that can lend itself as a stage, preferably non-theatrical, provided it can reveal the “secrets, the elsewhere” and contribute to stimulating “primary perceptions, the real matrices of illusion.”

Nono has conceived a special wooden structure, realized in 1982 by architect Renzo Piano in the church of San Lorenzo in Venice; Sciarrino designed a sound itinerary in the gardens of the Villa Rufolo in 2004.

The intention, in both cases, is to appropriate a space-site suspended between order and disorder: between the order of a studied, pseudo-scientific concept of the sound, or, rather, of its projection; and the disorder of the way in which the spectacle unfolds itself: through the motion of soloists and singers within the audience in Prometeo, of the audience among the performers in Lohengrin.

From a spatial point of view, the two works resort to a double acoustic: the natural (original) acoustic of the host site, and the artificial one created ad hoc by the composers.

The absence of a center for the sound, as in Bruno's theories the absence of a center of the world, implies the impossibility of absolute spacial determinations. In that open, omnicentral universe, there can emerge a coincidentia oppositorum. Intersecting with each other, the infinitely great coincides with the infinitely small, the indivisible point with the divisible body, the center with the circumference, any fragment of the cosmos with the infinite within us.

This inner infinite is not simply the site of life, but also a mode of life; not only does it reveal itself as the ultimate explanation of the universe, it also manifests itself in the opposite direction, that is to say in the complexity of the tiniest element, of the monad, of the pulviscolare, the microscopic, inaudible sound.

While Nono's purpose is to let the two acoustics “dialogue,” Sciarrino's is to restore music to its organic nature: that of a living organism, born of and dialoguing with nature. In the case of Prometeo the music will sound at first within the object created and thus within the acoustic space of the church (where the music-object will resonate). The relation thus achieved between sound and space will be based on two key moments:

1. The sound reading the space
2. The space opening itself up to the sound by revealing it, and by revealing Nono's concept according to which “the sound is no longer simply a sound, but an interpretation of space.”

“In like the relationship between outside and inside, or the signs of the passage of time on things, through which the real space, transfigured by light, makes itself space again within the mind.”

In Lohengrin, the music will draw on the natural space in order to extract its effects from it and capture its acoustical atmosphere, to the point of evolving and transforming itself in symbiosis with it. This Music-Soul, so to speak, to paraphrase Bruno, exists in all living things; present everywhere, it permeates everything; through infinite ramifications, it pervades all the elements of life, transmitting itself in a continuous, infinite mode.

The philosophical concept of the sound as a living organism that fragments itself, mutates, multiplies, and moves, is present in Nono and Sciarrino much in the same way as in Bruno's concept of the soul compared to a voice that resonates in all places, a voice infinitely multiplied and multipliable, or like a pulverized mirror, each of its parts reflecting a single image.

In this “ecological” framework, the technology expands and vastly amplifies every part and fragment, no matter how small, of the reality of the universe; captured and exalted, they eventually acquire the same dignity as sound-events as traditionally identified. In a similar way, Bruno's theoretical peregrinations focus on the recognition of the equal dignity of all living essences: the infinite planets have the same right to consider themselves at the center and their inhabitants have the
same privileges as humans. It is not possible to distinguish between a noble and a less noble part of the universe, since, all proceeding from a single divine will, precluding any hierarchical discrimination between the various areas of the creation.

**Transforming the sound in real time:**
**live electronics or interactive music**

In listening strategies, the sonic disposition (microphone, loudspeakers, computer system etc.) allows for a rich procedure of references, where the natural material and the transformed material constitute an inseparable whole without any distinction between the noble and less noble part of the sound (everything proceeding from a single creative will precluding any hierarchical discrimination between the various areas of the “created object,” the musical composition).

According to Bruno, the substratum of corporeal and incorporeal things, “source” of the infinite, proceeds from reality as a whole; generator and mother of natural things, source of the reality of all things, it contains all forms within itself.

If the material is the natural sound, the live electronic music used by Nono and Sciarrino is the equivalent of Bruno’s “Logos,” vivifier and creator, proceeding from all things, acting and expanding itself throughout the universe.

The technology of the appropriately named “live” performance, produced and listened to, consisting of a sonic source modulated by electro-acoustic instruments, allows one to “hear what cannot be heard!” The recourse to “interactive music,” as Philippe Manoury has described it, represents a form of “reaction against a certain rationalism – that of the music previously prepared in the studio – the excessive hegemony of calculation, theorization, and abstract combinations, always further removed from the practical, perceived reality,” and it raises the issue of performance. Composer and performers, by reaching beyond the limit of the phenomena of distortion, or “accidents,” in order to subvert the technology from the inside, will have to reformulate, time after time, the musical discourse, which will take on variable forms, obviously, depending on the acoustic space. This space, therefore, acquires a precise structural function as regards the musical composition. The joint presence of the acoustical sound and the amplified sound, of instruments of physical-mechanical and electronic generation, result in a dilatation and superimposition of sonic intensity.

This implies:
- a constant, painstaking evaluation of the acoustic responses of the sonic space where the performance takes place (“the space in its totality gets to be included in the music as a precise acoustical function”); xxxiii
- attention to, and multiple reformulation of, the architectonic space, the phonic characteristics of the walls, and the way the audience is distributed.

The two composers both aim to combine natural elements and “created” or artificial ones, by projecting traditional acoustic sources in a dynamic dimension. Through the use of electronic devices based on the concepts of postponement and filtering, it is possible to vary any sonic parameters by creating dynamic acoustic spaces that use fixed electro-acoustic sources. All this simply by changing the relations between direct sound signal and reverberation time in order to surprise the listeners’ expectations.

Controlling the sound by “playing” on the distribution of the various acoustic sources and on their articulation in an actual space thus takes on a role equally as important as the one of the orchestra.

The project of the electronic system becomes an essential part of the compositional process, and the experimental phase a fundamental moment of the work’s conception.

The technology of live electronics that characterizes Lohengrin II and Prometeo is based on a highly elaborate system of functions of control and transformation. The laboratory or precautionary experimental phase is an important moment, a source of “precious solutions” that would be difficult to identify on paper, given the number of unknown parameters (such as the audience’s absorption). The elaboration of Lohengrin was summarily prepared by
reference to an ideal itinerary of the audience. The resulting creative process was substantially the same for Nono’s *Prometeo*.

In both works, in fact, the direction and itinerary of the sound, like the wandering or deambulation of the audience (or the performers) is an integral part of the composition.

The listeners are not simply witnessing a musical event at which the protagonists simultaneously reveal various discourses, but they themselves are co-protagonists in the performance, in a way that recalls Bruno’s pantheistic vision in which human beings, identifying themselves with the supreme principle, the Logos creator of the infinite universe, are not just witnesses but co-generators of this universe.

Thanks to the “poetics” of microphony, listeners can capture and hear the inaudible, escape from the “human” time to immerse themselves into a three-dimensional time: horizontal, vertical, and diagonal. From the horizontal “zero time,” through a temporal time, one reaches simultaneity. Vertical time ultimately turns out to be the same as the horizontal zero time – “a progression from the successive to the simultaneous.”

**Conclusions**

The artistic conceptions of Nono and Sciarrino reveal their ambition to free people from all forms of external conditioning in order to initiate them to a new relationship with the work of art and with life in general. Music is presented as a problem of listening and invites a concrete reflection on listening. Speech, fragmented, dislocated, hidden, barely uttered, loses its function as bearer of meaning. Free from its “negative” connotation and from the need to say something, it is born and does in a living sound that may eventually translate it, or direct it towards the abyss of infinite senses. What happens, what evolves is thus only the sole sound, drama of listening in Nono, plans for infinity of various types of listening in Sciarrino.

The need, in both composers, to free men from external conditioning in order to put them in a new and potentially more authentic relationship to life, is in harmony with Bruno’s philosophical attempt to reveal the infinite to mankind itself.

In reality, the totality and the infinite are not an obvious manifestation of existence, but a tortuous conquest, which demands a metamorphosis that frees mankind from the prison of living.

When moved by the passion of knowledge and the desire for proper improvement, human beings do not pause before any obstacle; they break all barriers and proceed on a journey they know to be infinite; recognizing the vastness of the universe, they understand its immensity, its unlimited forces, its boundless extension. Inebriated with this immensity, they display a “heroic” strength to overcome all limits.

The “fantastic ramparts” of heaven having vanished, mankind projects itself beyond every closed horizon, immersing itself in an infinity of infinite spaces.

Not only is space infinite, but life is too, because infinite individualities are living in us as well, as in all created things; to die is not to die, because nothing can be annihilated. Death therefore is just an accident, in the course of which whatever mutates remains eternal.

Such is the meaning of the human struggle against the limits and the fears that paralyze the soul from all directions, to reach a world dimension that would not be self-limiting, but the domain of its own free expansion.

The collapse of the limits of the world is foretold with the enthusiasm of the prisoner witnessing the demolition of the walls within which he has long been held captive: shattered are the illusory heavenly spheres, the outer walls of the universe in which mankind was thought to be imprisoned, and beyond which it moves to show “what can actually be found over there.”

The idea of the infinite world leads to the idea of infinite human freedom; irrespective of its questionable scientific foundation, it represents the yearning of mankind to be reunited with the global infinite, to become fused with everything that can be grasped through perception or even imagined, in a
kind of anguished ecstasy; it is the anxiousness to go beyond oneself, as if to challenge and vanquish the limits imposed by nature itself (or by finiteness); it is the soul’s desire to raise itself above the limits of its transient nature towards heavenly paths, towards the infinite world of dogmatic reality, towards higher and hitherto unconquered summits.

Bruno’s merit is in his capacity to transform the infinite vastness of space in an infinite power of life and intelligence; in the capacity to elaborate a religion of the infinite, in which the love of life and the interest in nature come into fusion; and much in the same way the merit of Nono and Sciarrino comes from the capacity to transform the audible infinite into an inaudible infinite and vice versa.

By opening the infinite, human beings discover themselves the possessors of an infinite capacity, which they realize in the artistic creation and in actions undertaken for the common good: infinite, in fact, are the potential developments of each individual towards a renewed, pacific conviviality and “infinitely infinite” the good that can be achieved by imitating, in the world, the divine operations of nature.

In a diametrically opposed hermeneutic perspective, the immensity of the universe and the pulling down of its “outer walls” might result in a “blow” to human “narcissism” (to use the terminology suggested by Sigmund Freud),xxxviii in other words in a crushing humiliation for the pride of the human species.

Human narcissism drives mankind to suppose that the world was created for its sake; the infinite character of the world (no star being at its center), on the other hand, makes our planet appears as an insignificant celestial body; the image of an anthropocentric universe, built in function of human beings, is blown to pieces.

Mankind has to give up the idea of its supremacy in the world and vis-a-vis all other living beings; its own existence, in one of an infinity of worlds, becomes relative.

Discovering himself deprived of any privileged ontological status, no longer being the center or the useful end of the cosmos, the sole bearer of meaning in himself and sole raison d’être of the creation, man falls into anguish.

Sixty years after Bruno, Pascal, in his Pensées,xxxix describes the consternation caused by such a sense of reality: seeing the infinite everywhere, which weighs on him like an atom or a shadow, troubling him and filling him, in a manner of speaking, with a deathly feeling.


Idem, p. 58.

According to Bruno, there exists an unlimited plurality of worlds, stars (luminous and igneous), planets (crystalline or aqueous and lucid bodies), fulgurating suns, or rather solar systems, characterized by movement, perpetual mutation, and life, because populated by living, sentient, and rational creatures. See Bruno, G. *De infinito universo et mundi*.

We may recall Jauss's concept of eidetic reduction, which makes it possible to go beyond appearances to penetrate the deepest spheres of the unconscious: “[... ]n contrast to everyday perception that degenerates into a norm, a mode of perception at once more complex and more meaningful, which as aesthetic pleasure is able to rejuvenate cognitive vision or visual recognition (*aisthesis*).” Jauss, H. R. (1982). *Towards an Aesthetic of Reception*, transl. T. Bahti, Minneapolis: University of Minnesota Press, 142.


Sciarrino’s concept of organic music can be likened to Bruno’s idea of a universal soul that lives in nature and permeates it.
