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The Agency of Sound in the Light of Acoustic Ecology and Timothy Morton's *Ecology without Nature* Concept

A manifold significance of agency is attached to the epoch of Anthropocene. On the one hand, the term suggests destructive and intensive human activity within the functioning global ecological systems. This activity leaves behind a permanent anthropocentric trace, which — since the steam engine was invented in 1784[1] — has been uninterruptedly leading towards consecutive and irreversible changes and the destabilization of phenomena occurring on the whole planetary scale. On the other hand, the agency of Anthropocene is visible in how human and non-human activity permeate, act on, and bear upon each other on equal terms. Bruno Latour (after Oliver Morton) gives an example: the comparison of how energy is generated by human civilization and tectonic movements of lithosphere.[2]

The same characteristics of agency appear in the reflection on sound. In the 1960s, a concept of soundscape appeared, indissolubly connected with the personage of a Canadian composer and researcher Raymond Murray Schafer and with the activity of the team *World Soundscape Project*[3] set up by him. The team initiated an interdisciplinary discourse on the possible impact of sound on humans and its perception in ecological, sociological, psychological, philosophical, musicological, economical and esthetical aspect. The term soundscape was coined by joining the words "sound" and "landscape."[4] The facets of the term were changing along with the

[1] P. J. Crutzen, *Geology of mankind*, "Nature" 2002, no. 415, p. 23.

[2] B. Latour, *Waiting for Gaia. Composing the common world through arts and politics*, www.bruno-latour.fr/sites/default/files/124-GAIA-LONDON-SPEAP_0.pdf [access: 29.01.2019], p. 3.

[3] www.sfu.ca/~truax/wsp.html [access: 29.01.2019].

[4] R. M. Schafer, *Voices of Tyranny. Temples of Silence*, Arcana Editions, Ontario 1993, p. 104.

development of researches on what was called soundscape, the activity of *World Soundscape Project* and its publications summarizing the consecutive periods of scientific activity. The final definition was provided by Raymond Murray Schafer in the following words:

> SOUNDSCAPE is: An environment of SOUND (or sonic environment) with emphasis on the way it is perceived and understood by the individual, or by a society. It thus depends on the relationship between the individual and any such environment. The term may refer to actual environments, or to abstract constructions such as musical compositions and tape montages, particularly when considered as an artificial environment.[5]

Originally, the concept of soundscape was created as a response to the fact of noise pollution — namely, the pollution of the acoustic space caused by subsequent technological inventions (for instance radio, motorcars, domestic appliances, etc.) and their increasingly common usage. Schafer pointed out that the development of civilization is directly connected with new noises and acoustic disturbances existing and perceived by humans involuntarily. He singled out the fact of the existence of an audible consequence of human agency, appearing in the technological, sociological, cultural and economical field of human activity.

This "negative"[6] attitude toward the acoustic milieus implied mainly a critique of rapidly occurring civilization changes. Schafer called to the elimination of environmental pollution through restricting the use of noise–producing devices. The stance appeared, at bottom, rather precarious, since it failed to take into account the complexity of sociological, cultural and philosophical relations, existing between the acoustic space and humans. However, as the research on wider background of soundscape progressed, a broader definition appeared:

> ACOUSTIC ECOLOGY: Ecology is the study of the relationship between living organisms and their environment. Acoustic ecology is thus the study of the effects of the acoustic environment or SOUNDSCAPE on the physical responses or behavioral characteristics of creatures living within it. Its particular aim is to draw attention to imbalances which may have unhealthy or inimical effects.[7]

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[5] *Handbook of Acoustic Ecology*, ed.: B. Truax, www.sfu.ca/sonic-studio-webdav/handbook/index.html [access: 29.01.2019].

[6] The negative approach to sound environment was, in Schafer, the initial character of understanding the problem of soundscape as fighting with noise pollution — the fight based on eliminating destructive elements from acoustic environment by negating them.

[7] R. M. Schafer, *The Tuning of the World*, Knopf-McClelland and Stewart Ltd., New York-Toronto 1977, p. 271.

Noticeably, Schafer uses the phrase of "effects of the acoustic environment . . . on the physical responses." Thus, he claims that the consequences of sound relations between space and other organisms are some actions producing tangible and "physical" effects. Still, the writings of the Canadian researcher and his methodological approach, if analyzed, do not allow a clear-cut conclusion that humans and soundscape have an equal agentic contribution in creating that mutual relation. According to Maksymilian Kapelański,

> In Schafer's ecological paradigm, humans are situated in the center of the environment, the latter being assessed and measured according to that position. When speaking of soundscape, Schafer proposes humans as the basic module addressing Le Corbusier's model: "in the human environment, it are humans that make up the basic module."[8]

It is the human (in Schafer's concept) that causes changes which are shaping soundscapes. In Schafer's reflection, soundscape but mirrors cultural, technological and sociological phenomena occurring within human realm of perception and human construction of reality.

Schafer's soundscape was the acoustic environment taken as a whole or its fragment (e.g. the acoustics of an urban district or a certain geographical area seen in a border background). Its "pollution," issuing from the sound present in it and existing due to the development of civilization, created several relations with humans. Pointing out to these relations was meant to raise social awareness of the problem of active molding of the environment by humans. Soundscape is, consequently: "understood by Schafer in the categories saturated with what concerns human being."[9]

Soundscape and the Ecology without Nature

In his book *Ecology without Nature*, Timothy Morton addresses the problem of how humans regard ecology as well as the process of creating the notion of Nature implied therein. He applies eco-mimetic devices elaborated according to the so-called *poetics of ambience*.[10] Discursive production of impressions and ideas connected with Nature implies the production of the sense of their outer realm existing first; the sense of humans being surrounded by non-

[8] M. Kapelański, *op. cit*., p. 92. The basic module Schafer refers to in *The Book of Noise* is the concept of modernist *modulor* of the architect Le Corbusier. Cf. R. M. Schafer, *The Book of Noise*, www.sfu.ca/sonic-studio-webdav/WSP_Doc/Booklets/BookOfNoise.pdf [access: 29.01.2019], p. 23.

[9] M. Kapelański, *op. cit*., p. 13.

[10] T. Morton, *Ecology without Nature*, Harvard University Press, Cambridge — London, 2007, pp. 31-33.

humans. Morton underscores phatic[11] characteristics of *poetics of ambience* and remarks that the non-human elements are in a position to remind of their existence no less poignantly than the human ones, e.g.: traces existing on the snow on the streets remind humans (and obstinately so) of their ability to walk.[12] Analogically, the researchers of soundscape realized the existence of both human and non-human sounds in the surrounding audiosphere — due to the original perception of importunate noises. Creating a distance between humans and Nature is implied in the very idea of soundscape and suggested in the first singular I LISTEN; for, it is measured by the scope of a listener; his/her position against an object or objects located beyond (and expressed) in the third singular/plural.

Some field recordings (meant to analyze acoustic milieus) were main instruments of the *World Soundscape Project* researchers. Raymond Murray Schafer, whilst analyzing soundscapes, came to a conclusion that they might be divided into some simple elements. In his research, he addresses both the idea of acoustic listening (the one separated from its source, e.g. a speaker) and the theory of acoustic object (elaborated by Pierre Schaeffer).[13] If recorders are used, an acoustic object will be liable to modifications; for, it could be recorded from many places; the angle of the axis of a microphone could vary as well as distance and the medium sound travels through; the recorded sound could be divided, superposed and played in non-chronological order if montage techniques were to be used. So, just one acoustic event can be a set of its own representations, or — to use Husserl's tongue — phenomena. Following the footsteps of phenomenology, Schafer notices yet another fact: the acoustic object "is entirely included in our perceiving consciousness,"[14] which is to say: it is expressed in the human perception perspective only.

A way out of the anthropocentric impasse the reflection on the ecology of acoustic phenomena has blundered into seems to be using the model of

[11] As Morton stresses, phatic properties need not relate to the medium of speech only, but to graphics and music too — in the latter case he prefers the formula *medial* instead of *phatic*.

[12] T. Morton, *op. cit*., p. 37.

[13] Raymond Murray Schafer seized sound objects as the smallest particles of soundscape. However, he distances himself from the approach of the French composer, regarding soundscape as the realm of interaction (the idea of the sound event was to be deduced therefrom later on). Cf. M. Kapelański, *op. cit*., p. 121.

[14] P. Schaeffer, *Akuzmatyka*, trans.: J. Kutyła, [in:] *Kultura dźwięku. Teksty o muzyce nowoczesnej*, trans.: J. Kutyła, ed.: Ch. Cox, D. Warner, Słowo/obraz terytoria, Gdańsk 2010, p. 110. Pierre Schaeffer associated acousmatic listening (the one of sound abstracted from its background) with the Husserlian method of phenomenological reduction. See E. Husserl, *Die Idee der Phänomenologie. Fünf Vorlesungen,* Hrsg. und eingeleitet von Walter Biemel. Nachdruck der 2., erg. Auflage, *Husserliana: Edmund Husserl — Gesammelte Werke II*, 1973.

hyperobjects introduced also by Timothy Morton. The model abolishes the frame of reference built on the opposition of the first singular and the third singular/plural (with a dissonance felt in it). According to the philosopher, hyperobjects are overwhelmingly dissipated in time and space in relation to humans. They might be objects of completely different provenience, albeit huge impact on reality, e.g.: Black Holes, biosphere, the Solar System, nuclear substances, Styrofoam or capitalism.[15]

According to Morton, hyperobjects are located in a space not yet discovered by man. Basing on the so-called *object-oriented-ontology*, Morton advances the idea of objects which transcend human cognitive capacities. Graham Harman, in turn, who undertakes polemics with Husserl's philosophy, remarks that phenomenology calls to returning to the Things Themselves (which means: to their absolute self-representation) omitting, at the same time, the sphere of the beyond-human outer world. It is restricted to phenomena existing within the scope of human perception only.

> . . . phenomenology limits us to that which is directly accessible. . . . Husserl goes so far as to exclude all possibility of objects that are unobservable in principle by consciousness . . . [16]

According to Harman, experience elapses the grasp of thought; it cannot be reduced to sheer progress of human thinking. He claims that objects might appear in the guise totally different to, and non-determined by, human experience. The fact that they are not experienced is by no means tantamount to the fact that they do not exist.

Morton proves this thesis basing on some physical theories, to wit: quantum mechanics and Heisenberg's uncertainty principle. The human's inability to understand all processes occurring in space was consequent upon the nature of things. First of all, trying to describe micro scale phenomena with the tools of classical mechanics resulted in false outcomes.[17] Diffraction and interference of waves as well as the structure of atoms could not be described adequately save by assuming that energy is quantized (a unique amount of discreet energy is contained therein).The uncertainty principle, in turn, says that some pairs of physical quantities exist and the precision with which they can be measured is limited (they cannot not be measured precisely at the same time). Morton assumes, consequently, the existence of a certain dark side of objects, stemming from objects themselves. He thinks that hyperobjects are things constituted although being completely out-of-

[15] T. Morton, *Hyperobjects. Philosophy and Ecology after the End of the World*, University of Minnesota Press, Minneapolis-London, 2013, p. 1.

[16] G. Harman, *The Quadruple Object*, Zero Books, 2011, p. 28.

[17] Mechanics based on the principles of the Newtonian dynamics.

reach for human perception. They are, in a sense, exempted from the scale of time and space seized anthropocentrically.

Morton transposes the theory of hyperobjects onto ecological thinking and analyzes the manner in which it functions in the category of landscape. He remarks that landscape, in this case, cannot be founded upon the aforementioned first/third/singular/plural perspective with its outer relation existing between the subject and the object. The so-called *zero-person perspective*[18] should be assumed to the effect of equaling humans to the other (non-human) objects and allowing the latter (both those perceiving and non-perceiving) to show their agency. The hyperobjects must not be understood as landscapes which were but fragments of broader global spectrum. They transcended humans in such a way that it was impossible to "snapshot" them. On the contrary: they permeated other beings. Thus, humans plunged into the essence of hyperobjects rather than were surrounded by them. Humans perceived them and were conscious of them, although unable to grasp precisely the nature of their functioning.

The Properties of Hyperobjects

Morton stresses that humans are part of hyperobjects all the time; they exist in, and coexist with, them. Albeit unable to understand them completely, humans are in a position to associate, to set up relations and interactions with them. Morton distinguishes some characteristic properties of hyperobjects — inter alia their *viscosity*.[19] Due to them, humans manage to localize hyperobjects and to set them in the space they experience. According to Morton, hyperobjects "literally" stick to humans. Radioactive rays are absorbed by bodies; global warming touches the whole planet causing palpable changes in how organisms function. Hyperobjects form, consequently, part of humans: they make them participate in their own functioning — once getting into organisms they mold and modify them effectively. Morton depicts the problem on the example of a swimming pool: it reminds a swimmer of its existence in the moment the temperature of water drops and gives the body goosebumps.[20]

Thus, the hyperobject of the soundscape "clung" to Schafer in the moment he realized the problem of intensifying noise. Making out the palpable

[18] T. Morton, *Zero Landscapes in the Time of Hyperobjects*, "Graz Architectural Magazine" 2011, no. 7, p. 80. Timothy Morton accepted the term from Graham Harman. Cf. G. Harman, *Zero-Person and the Psyche*, [in:] *Mind that Abides: Panpsychism in the New Millennium*, ed.: D. Skrbina, John Benjamins Publishing Company, Amsterdam-Philadelphia 2009, pp. 253-282.

[19] T. Morton, *Zero Landscapes…*, p. 83.

[20] Ibid., p. 84.

problem of signals masked by acoustic disturbances superimposed on them and the problem of incessantly growing threshold of noise, he commenced projecting strategies of sorting it out. Putting aside this anthropocentric aspect of Schafer's model, we might say that if the very process of spotting the problem of noise started, it was because of a non-human being: a sound which began to remind of itself importunately.

Hyperobjects are palpable and viscous, but, at the same time evasive: the fact testified by such like properties as: *squishing*, *nonlocality* and *transdimensionality*.[21] Basing on physical properties of matter, Morton says that a hyperobject seems to diminish and flatten along with distance and time growing, and it is because of its being dissipated so much in time and space. That is why hyperobjects remain enigmatic and mysterious for humans: they appear distorted. They curve their figures in an unpredictable manner and intensify thus the sentiment of ecological anxiety. In Einstein's theory of relativity, matter curves in various time spaces — in various frames of reference. The same is the case with hyperobjects: they change when viewed from various perspectives, be it from land or cosmic space. The same curving takes place if human perspective is replaced by the non-human one.

Nonlocality makes hyperobjects slip out of comprehensive grasp. Besides being huge and complicated, they permit being seen and experienced by humans in certain fragments and in certain moments only. Morton adduces examples of weather and global warming: precipitation and growing temperature are experienced as those of climate in a certain sense.[22] However, it is nothing save a local experience and a fragment singled out of a broader context of a hyperobject. The existence of hyperobjects is entangled with their being transdimensional, for hyperobjects occur in the space of possible actions (the actions could take place but need not). That is why they are seen in time in fragments and incompletely.

The aforementioned properties of the hyperobject are revealed in the moment acoustic phenomena are reflected upon: the ones directly concerning non-human beings. The researches on bio-acoustic possibilities of plant communication carried out by Monica Gagliano are worthwhile mentioning. The case of pea-plant (*Pisum sativum*) using sound for localizing water was described.[23] In a series of experiments projected by a research team, a pea-plant was planted in specially devised vessel: two possibilities existed for sprouting the roots either to the left or to the right as in an inverted "Y" letter. At its both

[21] Ibid., p. 83.

[22] Ibid., p. 86.

[23] M. Gagliano, M. Grimonprez, M. Depczynski, M. Renton, *Tuned in: plant roots use sound to locate water*, "Oecologia" no 184 (1), pp. 151-160, https://www.researchgate.net/publication/315811492_Tuned_in_plant_roots_use_sound_to_locate_water [access: 29.01.2019]

ends, impulses meant to stimulate the direction of growth were applied: real water (to check how humidity influences the direction of growth), a recorded sound of swishing water (as an acoustic substantiation of liquids), white noise (to check the influence of acoustic vibrations transmitted by soil) or a wrapped PVC tube (carrying vibrations of the water pumped through it). The impulses were applied both separately (the one at the one side only) and combined (to compare which one stimulates the growth). Research proved that the pea-plant directs its roots equally to the real water and its representation in the guise of acoustic vibrations carried in a medium other than liquid. Moreover, it was observed that in the moment a recorded sound of water was applied at one side of roots and white noise at the other, the disturbances caused the localization of water by the plant to be less effective.

The agency of sound in the case of the pea-plant can, consequently, both help in the localization of water and destabilize it. It sheds light upon the problem of acoustic pollution present in the plant world also. The bio-acoustic communication of the pea-plant is a hyperobject. It is *squishing* as far as the plant perspective vis a vis sounds and mechanisms of detecting them are totality different to those basing on human principles. If human optics is replaced by the non-human one, the mechanisms are distorted and flattened. Moreover, as the researchers themselves admit, the process of detecting the sound remains unknown; only its results are visible.[24] So, humans communicate with but one facet of the global phenomenon of the pea-plant; they are able to advance hypotheses only as to how plants function. That we are in the dark here is of course connected with the bio-communication of plants being transdimensional. As they have at their disposal exclusively human abilities to experience, analyze and perceive, humans have but a fragmentary access to those phenomena.

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The Mortonian zero-person perspective (if accepted) requires thinking over new strategies of describing ecological relations, not least those connected with acoustic ecology. Morton postulates, then, a new way of projecting environments — the one of coexisting with hyperobjects and not restricted to how they are perceived outwardly.[25] The example of bio-acoustic research on pea-plant seems to offer an opportunity to apply the model of a hyperobject to sound in order to to survey its agency in non-human cognitive fields. Moreover, Morton remarks that projecting special computer technologies, useful in understanding such objects as climate change, is based mainly on

[24] Ibid., p. 159.

[25] T. Morton, *Zero Landscapes*..., p. 87.

global cyber nets. Huge counting abilities may be more effective in seizing the status of hyperobjects. It is due to the use and better understanding of these abilities that assuming the zero-perspective toward hyperobject becomes (to Morton's mind) possible.

Nonetheless, humans as such remain all the time limited vis a vis hyperobjects, for the cognitive capacities are broadened within the medium of digital technologies only. The access to them is fragmented and representative of the surveyed phenomena. The cognition of the hyperobject is substantiated in technology. The data are processed, translated and represented in the way understandable to humans: as a linear text, tables, graphs of acoustic waves or — to take into consideration the structure of code — as a representation of the binary System figures. Thus, technology is cognitively closer to hyperobjects than humans themselves. Technology (in this aspect) — following the footsteps of posthumanism — is the way reality reveals[26] to humans. For them, virtual space remains a hyperobject all the time: the one unknown, mysterious, evasive, out-of-control and impossible to be known fully. Still, it is because of virtual space that humans can approach some even greater hyperobjects as well as the dark side of ecology.[27]

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Abstract

The article raises the issue of Raymond Murray Schafer's soundscape, its agency and its anthropocentric perspective. The author of the article juxtaposes the acoustic ecology and Timothy Morton's ecology without Nature and notes the first- and third-person relationship forming between the human and the sound in Schafer's model. The way to overcome the distance seems to be adopting the zero-person perspective and applying the hyperobject model for describing the correlations between humans and non-humans.

Keywords: soundscape, acoustic ecology, hyper objects, Timothy Morton, ecology without Nature, zero-person perspective.

[26] F. Ferrando, Posthumanism, Transhumanism, Antihumanism, Metahumanism, and New Materialisms. Differences and Relations, „Existenz" 2013, vol. 8 no. 2, p. 29, https://existenz.us/volumes/Vol.8-2Ferrando.pdf [access: 29.01.2019]

[27] Cf. T. Morton, *Dark Ecology: For a Logic of Future Coexistence*, Columbia University Press, New York 2016.