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Clément Barniaudy

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NARRATIVES IN THE ANTHROPOCENE ERA

Charles Travis, Vittorio Valentino (Editors)

Preface by Kirill O. Thompson

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Geographies of the Anthropocene

Narratives in the Anthropocene era

Charles Travis

Vittorio Valentino

Editors

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8. Becoming aware of the living air: from scientific and indigenous narratives to care ethics

Clément Barniaudy[1]

Abstract

Every day, vast quantities of gaseous effluents and industrial pollutants are rejected into the atmosphere. Although we are fully aware of this, as human beings living in Western societies, we continue to ignore the invisible and subtle element that is air, considering it an empty space, a conveniently forgotten dump site. This paper invites us to become aware of the importance of the aerial matrix which intertwines human and non-human, recognizing that all forms of existence can be possible only because of the presence of this more-than-human medium, both inside and outside of us. For this purpose, we first consider scientific and indigenous narratives capable of embedding our body-mind into the living air in all its richness and depth. Secondly, we explore the phenomenological approach as a skillful means of activating the participatory nature of our sensory perception within the weather-world. From these sensuous and narrative experiences, we can see the potential for the emergence of profound empathy for every living being, grounded in a renewed attentiveness to the living land and atmosphere that sustain us, and that can be the basis for integrative environmental education and care ethics.

Keywords: air, scientific narratives, indigenous narratives, phenomenological approach, care ethics

Introduction

From the early days of spring 2020, there was something in the air, something imperceptible that provoked distrust and anxiety. The air had a

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bitter taste. There was something suspicious about the wind. Open air became rare. A great many of us lacked air. We tried desperately to create moving air in an effort to ease those most affected. Our relationship with the outside world was strained as we tried to avoid airborne droplets, as it was with the inside world as we tracked any signs of a possible invasion of our airways. We became increasingly aware of our breathing. Coronavirus SARS-CoV-2 has woven a new web around our lives, our breaths. Many of us feel stifled behind closed doors, forced to breathe in stagnant indoor air. Even though we were used to living mainly inside in our Western societies, the lack of fresh air overtook us at that point. We felt powerless in the face of such a tiny, invisible virus, capable of hiding in every corner of the atmosphere. More than ever, we are living an 'airproof experience' as the French poet Paul Valéry wrote in *Le Cimetière Marin*: "The wind is rising!... We must try to live!" (*Le vent se lève !... Il faut tenter de vivre !*) (Valéry, [1920]1957, p. 151).

1. Forgetting about air: meanings, effects, and issues

This ordeal has undoubtedly not been a vain struggle, and the Covid-19 pandemic may help us emerge from our 'forgetting' about air. For decades now, forgetting about air has been deeply embedded in our ways of perceiving and acting within the Earth's atmosphere:

> In the world of modernity, the air has indeed become the most taken-for-granted of phenomena. Although we imbibe it continually, we commonly fail to notice that there is anything there. We refer to the unseen depth between things - between people, or trees, or clouds - as mere empty space. The invisibility of the atmosphere, far from leading us to attend to it more closely, now enables us to neglect it entirely. Although we are wholly dependent upon its nourishment for all our actions and all our thoughts, the immersing medium has no mystery for us, no conscious influence or meaning (Abram, 1996, p. 258).

These sentences by the geophilosopher David Abram resonate even louder today, as we know that air pollution makes us more vulnerable to the coronavirus. Certainly, there remains much debate between scientists on the role played by pollution from particles suspended in the air, as an important

vector for the propagation of the virus[2]. However, there is no doubt that road traffic emissions and the use of pesticides damage the mucous membranes in the respiratory tract (making them more permeable to pathogens), nor that long-term exposure to these air pollutants weakens our immune system.

Beyond this pandemic, forgetting about air has killed millions of people in the past few years. Ambient air pollution has become one of the main global health risks, causing significant excess mortality and decreased life expectancy, especially through respiratory and cardiovascular diseases, as a recent study shows: "Global excess mortality from all ambient air pollution is estimated at 8.8 (7.11–10.41) million/year, with an LLE (Loss of life expectancy) of 2.9 (2.3–3.5) years, being a factor of two higher than earlier estimates, and exceeding that of tobacco smoking" (Lelieveld *et al.,* 2020, p. 1910). In Europe, the impact of air pollution is estimated to be responsible for 790 000 premature deaths per year (*ibid.*: 1912). The major pollutants are gases (nitrogen dioxide, ozone, carbon monoxide, sulfur dioxide), combined with natural fine particles (sand, algae, ash, dust, etc.). These fine combined particles can be deposited in our lungs (if they are smaller than 10 microns: PM10), even crossing the barrier of the pulmonary alveoli to penetrate into the blood system (if they are smaller than 2.5 microns: PM2.5). The human body often reacts through an inflammatory response and a wide range of disorders (neurological, endocrinal, metabolic, stroke, among others).

All these figures on the effects of air pollution are a clear sign that we have neglected the air, despite its great importance for our lives. Following the reflections of David Abram in *The spell of the sensuous*, we think that such carelessness has a particular significance:

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[2] No one has failed to notice that the first major outbreaks of Covid-19 in spring 2020 corresponded to heavily polluted areas: Wuhan region (China), the Po Valley (Italy), Ile-de-France region (France), New York State (USA), among others. In this context, the Italian society of environmental medicine (SIMA) has hypothesized in a position-paper published on 17 March 2020 that pollutant particles may have played a decisive role in the propagation of the virus in the Po Valley (https://www.simaonlus.it/wpsima/wp-content/uploads/2020/03/COVID19_Position-Paper_Relazione-circa-l'effetto-dell'inquinamento-da-particolato-atmosferico-e-la-diffusione-di-virus-nella-popolazione.pdf). This position-paper, based on previous studies related to the transmission of other diseases, was challenged in subsequent scientific publications; for an overview of this subject and the issues for public policy, there is the report by the observatory for Ile-de-France regional health (ORS), 28 September 2020, Available online: https://www.ors-idf.org/nos-travaux/publications/pollution-de-lair-et-covid-19/ (accessed 20 April 2021).

> Phenomenologically considered – experientially considered – the changing atmosphere is not just one component of the ecological crisis, to be set alongside the poisoning of the waters, the rapid extinction of animals and plants, the collapses of complex ecosystems, and other human-induced horrors. All of these, to be sure, are interconnected facets of an astonishing dissociation - a monumental forgetting of our human inherence in a more-than-human world. Yet our disregard for the very air that we breathe is in some sense the most profound expression of this oblivion. For it is the air that most directly envelops us; the air, in other words, is that element that we are most intimately *in*. As long as we experience the invisible depths that surround us as empty space, we will be able to deny, or repress, our thorough interdependence with the other animals, the plants, and the living land that sustains us (Abram, 1996, p. 260).

Air is considered by our Western cultures to be a lifeless space, separate from us, and without any 'agentivity'. Denying its importance can be correlated with our inability to challenge our behavior in the face of global climate change and ecological crises. In other terms, the problem here is first and foremost a question of *perception*: perception of air and self-perception within air. Since the beginning of the 20th century, industrial civilization and science have instilled in us two comfortable misconceptions: on the one hand, that human action should not disturb the climate and air, and on the other, that rich societies have nothing to fear from its upheavals (Fressoz & Locher, 2020). Our skill for paying attention to living air has been relegated to bourgeois, conservative and esthetic issues, to the point that it is no longer part of our 'collective and political attention' (Morizot, 2020).

With our common sense, we draw the earth as a ball-like shape surrounded by an outline of sky. For Tim Ingold, "this image, supposedly representing the 'correct' scientific view, leaves people as 'exhabitant' of the earth, stranded on its outer surface." (2008, p. 32) The exhabitant of the earth is a person who feels separate from the sky, strictly distinct from the aerial world and capable of observing it from the point of view of a flat earth. One of the ambitions of Tim Ingold's thinking is to understand how we can move from habitual ways of perceiving air as exhabitants of the earth, to new ways of dwelling, as 'inhabitants of weather-world'. In this weather-world, also called 'open world', there is no longer an absolute division between earth and sky, and our place in the environment changes radically: "To inhabit the open is not to be stranded on a closed surface but to be immersed in the fluxes of the medium, in the incessant movements of

winds and weather." (*ibid.*) Inhabitants of the weather-world are people who perceive themselves as porous beings immersed in the movements of the air, dwelling *within* a 'world of becoming', where the air and wind *are* agency and interconnect all life forms.

Faced with the pandemic and environmental crises, are we condemned to passively enduring or wearing masks indefinitely, trying our best to filter the eight liters of air that an adult inhales every minute? Can we find solutions to road traffic emissions other than these 'air purifiers' which are proliferating in the domestic spaces of major cities such as Delhi? We believe that the prevailing critical situation is also a fabulous opportunity to go beyond this belief that multicolored smoke and chemical fumes can all cancel each other out, somehow, in the invisible emptiness. Many people in Europe, and indeed around the world, have recently fled from big cities to the countryside, responding to the desire for better air quality. But the question still remains: how can we overcome the collective amnesia that has reduced air to nothing more than a dump site, and how can we remember the importance of this aerial medium that flows both inside and outside of us, allowing all forms of existence to flourish?

2. Aerial narratives: dialog between scientific knowledge and indigenous cultures

Answering this question first implies mindfully considering the *narratives* that lead to us embodying the point of view of a weather-world inhabitant. Narratives are not simply anodyne fairy tales; they are also *meaningful ways of creating sense and affecting us deeply*, *both emotionally and cognitively* (Weik von Mossner, 2017). In the Anthropocene era, narratives introduced an inclusive way of reasoning, as emphasized by Deborah Bird Rose and Libby Robin: "It may be that narrative is the method through which the reason of connectivity will find its most powerful voice. This method offers the profound possibility of telling stories that communicate, invoke, and invigorate connections." (Rose & Robin, 2004) Within stories, these authors invite us to consider in particular new scientific narratives developed equally around both ecology and indigenous narratives "because in many areas they already have connective concepts of the relationships between humanity and the biosphere." (*ibid.*) This dialog between scientific knowledge and indigenous cultures prevents us from falling into the official narrative of the Anthropocene which only gives the key to 'spaceship Earth' to engineers (Bonneuil & Fressoz, 2013, p. 13). In

fact, expert discourse in Western modernity has systematically evicted or mocked narratives that did not come from a 'blind' third-person point of view, while narratives assuming their point of enunciation support a 'point of life' aesthetic, which is also an antidote to the 'hubris of the zero point' (Bonvalot, 2019). Yet considering these new narratives is the very condition needed for the emergence and re-emergence of 'incorporeal universes of reference' which can transform how individual and collective historicity unfolds (Guattari, 1989, p. 26). From this perspective, we will consider 'aerial narratives' that include any kind of narrative that highlights the relationship between the human, non-human and air. And the first 'narrative track' we would like to explore in this way concerns the biology of air.

2.1 Scientific narratives of the living air

As the heirs of modern thinking, we are so accustomed to determining the reality of something by using our eyes, that we have forgotten that air is a lively and evolving habitat, full of multispecies connectivity. Far from being inanimate and inconsistent, natural scientists tell us that the air is populated with an entire cohort of all kinds of beings: viruses, spores from bacteria and algae, fungi, vegetative cells, ferns, protozoan cysts, without forgetting more visible ones such as birds, insects, pollen, seeds, and small airborne animals. Yet, many of these organisms use air only as an ideal mode of transport, a means to settle elsewhere and begin a new life. Nevertheless, a large number of species *inhabit* the air in the true sense of the word, at least temporarily, settling there in adulthood.

This invisible ecology of the air is far from being anarchic, with each territory generally correlated to the thermal stratification of the atmosphere and global wind systems. On the basis of these two criteria, biologists specializing in the atmosphere define areas with specific aeroplankton composition that also vary in relation to local conditions (topography, interaction between land and sea, regional and local winds, among others). The area with the richest biodiversity corresponds to the 'planetary boundary layer' (with an average thickness of 1000-2000 meters, although it can be reduced to 50 meters depending on winds and luminosity) where the constantly moving air is directly influenced by its contact with the planetary surface. To understand the abundance of life in this area, the great biologist Lyall Watson invites us to imagine a column of air measuring one kilometer above our shoulders: this column contains a delicate balance of around 30 million living beings (1986, p. 188). The 'free atmosphere' above this

column, traversed by huge fluxes related to the Earth's rotation, is also inhabited by a myriad of organisms.

Barricading ourselves inside an air bubble, purged of all bacteria and viruses, is simply impossible. We need to learn how to cohabit with all the species blowing in the wind. Air is a sort of primordial soup, full of powerful evolutionary forces, and it cannot be placed under control, or even 'pasteurized'. It is also the place for the fruitful interactions between lifeforms, genetic mixing and interbreeding that have enabled life on earth to flourish in all its diversity and richness. When subjected to closer scrutiny, our suspicion that air flow is a refuge for misplaced viruses should subside and we should be able to recognize its power to renew fertilization. Although plants are sedentary and can only enjoy sexual pleasures by proxy, wind plays its part in the transfer of male reproductive cells to female ones. Only 10 percent of plants use air transport (rather than insects and pollinating animals), yet they represent 90 percent of the plant mass on earth (*ibid*., p. 201). A wide variety of plant species entrust their fruits and seeds to the wind, developing surprising forms that look like parachutes or gliders with one wing in order to travel easily. The moving air also nourishes the soil by providing organic matter over long distances.

Following this scientific narrative of the living air, we start to become aware that every breath we take is in an *invisible air cauldron* which is *the very fabric of life*. If we truly want to be part of this world, we have no choice but to recognize our interdependence with the aerial world and take care of it.

2.2 *Narratives of indigenous peoples: Nilch'i, the 'Holy Wind' of the Navajo*

These scientific narratives resonate with those of indigenous peoples who see air as a sacred matrix thanks to its utter invisibility, combined with its obvious influence on various phenomena. And it is precisely through this contact with the ineffable and efficacious presence of air that populations with an oral tradition have formed narratives, capable of embracing this paradox. Indigenous narratives, reiterated and embedded in rituals, are learning patterns, comparable to scientific discourse in the West: they are respected voices, forwarded and embodied in cosmovisions and ontologies (Descola, 2014). They thus form another 'narrative track' that can help us becoming aware of the air, contrasting with our habitual way of perceiving air as empty space. Some of the most interesting narratives about air are

those of the Navajo Nation (also called 'Diné'), who inhabit the Colorado Plateau (South Western USA).

For the Navajo, the air, wind, and breathing are referred to as '*Nilch'i*'. What is referenced by the term *Nilch'i* is firstly the air or atmosphere in its entirety, conceived as having a holy quality and powers that are not acknowledged in Western culture (translated into English by the expression 'Holy Wind' or 'Holy Wind Spirit': McNeley, 1981). Air permeates Nature in its entirety and forms a relationship of unity between all sentient beings. It is a *moving atmospheric matrix*, an interdependent network that links, in a subtle manner, every element in the living world (humans, plants, animals, minerals) within a common texture.

But *Nilch'i* can also be 'The Wind within one' (*nilch'i hwii'sizinii*), which is the air inhabiting and swirling inside of each being. It is this invisible phenomenon that activates lifeforms from within. Some Christian Fathers, seeing how the Navajo thought and wanting to evangelize them, interpreted this concept of 'the wind within one' as a deviant belief in the soul: a soul that entered the individual at birth and left at death, dominating the individual's behavior throughout his or her life. But the ethnologist James K. McNeley – whose wife is a member of the Navajo community and who has thus lived with them for decades – shows that the more autonomous aspect of *Nilch'i*, 'the wind within one,' should be understood as the dwelling place of the global 'Holy Wind', and is one of its multiple centers, like a knot in a web.

Nilch'i has the power to move every element in the living world internally and to make all these elements interact externally. Each 'being of wind' is influenced by others 'beings of wind' and by the 'Holy Wind'. Yet each being also plays a part in modeling the global wind through its intentions, thoughts, desires, speeches and actions. No person is passive in their relationship with the sacred wind: they participate in it as one of its parts. By influencing the shape of the surrounding wind, they also have an influence on the events occurring in the territory (seed germination, animal reproduction, cloud formation, and precipitation, etc.). Therefore, each 'being of wind' is invited to follow the 'Windway,' which is the way leading to peace within oneself that enables one to restore *Hozho* (harmony) in the world. Some specific practices – in particular meditation, prayers, and chants – serve precisely as a support for actualizing self-respect, respect for other 'beings of wind' and for the 'Holy Wind'. From this perspective, human wellbeing depends directly on the reciprocal care relationships with sentient beings (human and non-human), natural phenomena (water,

mountains, the sun, stars, etc.) and more generally with this subtle matrix composed of moving air that conditions how phenomena occur.

In Navajo narratives, *Nilch'i* is never a property that is separate from the world, a permanent and distinct self, but is instead a property of the medium in which every sentient being participates. These indigenous narratives define what Arturo Escobar calls 'relational ontology' in which "all things of the worlds are made of entities that *do not preexist the relations that constitute it*" (Escobar, 2018, 75). Is this sense of animate entities present in moving air, used as a basis for a relational ontology, unknown in our Western cultures?

The answer to this question is, in fact, no. In ancient Mediterranean cultures, we find many terms referring to similar understanding of the wind and air. For example, there is the pair *ruach–neshamah* in Hebrew: *ruach* means both wind, breath, and spirit (Lys, 1962). *neshamah* has a meaning close to 'the wind within one,' denoting both breath and the soul. Breath plays a specific role in ancient Semite scribes, as only consonants are written, and it is breath that creates vowels – which are nothing other than sounded breath – giving form to the text. In ancient Greek, we also find the word *psukhé* which signifies not merely the 'mind' or 'soul' but also 'breathing' or 'blowing' (Llyod, 2008), and from which we derive the terms 'psychology', 'psychotherapy', etc. Similarly, the Latin word *anima* (from Greek *anemos*) referred to an elemental phenomenon that included the air and 'that which thinks in us' (*animus*) and from which evolved such terms as 'animate', 'animism', etc. Another ancient Greek word with a similar sense is *pneuma* (and its derivatives: 'pneumatic', etc.) which can be used for 'air, wind or breath' and also to signify a vital principle within the animate world. We find the same connotations in the Latin word *spiritus* (and *spirit* in English). Of course, this understanding of air is not limited to our European civilizations, as we can see with the terms *prana* in Sanskrit, *lung* in Tibetan, and *qi* in Chinese. But we are also familiar, in a certain sense, with experiencing air as the very matter of awareness or the mind, something that is neither separate from the rest of Nature, nor a passive medium.

3. A phenomenological approach to recall the air and activate our sensory perception

This way of considering air, of allowing ourselves to experience the invisible presence of the aerial medium as vibrant matter, has not completely disappeared today. Of course, during my doctoral research, I observed that most wind experiences try to 'grasp' or 'capture' movement in the atmosphere (Barniaudy, 2016). These experiences involve the ability to disengage ourselves from the environment using technology (especially for meteorological occurrences, using highly complex *dynamic simulation models* that can be accessed on every smartphone or computer). These technical tools are inherently linked to normalized knowledge that tries to represent moving air within a virtual space that is separate from the living world. All this knowledge and technology is used to optimize practices, for economic purposes and using a utilitarian approach. This approach along with technological hybridization result in deterritorialization of actions that are no longer able to take place in the weather-world, but instead try to control it, from an exhabitant point of view (Barniaudy, 2018).

However, these are not the only practices that exist and, although not common, I have also encountered, in some very windy North Western Mediterranean rural areas, geographical actors (sailors, farmers, architects or simple habitant) that commit their entire being, their body-mind to the weather-world, to such an extent that they seem embedded into the folds of the atmosphere (Barniaudy, 2021). In this case, they need to develop attentional skills and a sensitive disposition in order to connect with their surrounding environment. The effort of reading the signs of present and future weather events in the aerial matrix reinforces the *situated knowledge* and *embodied action* that are territorialized in the inhabiting world. These actors are also those that have the most significant and holistic relationship with the weather-world, including many dimensions of inhabiting (practical and economic, but also cultural, poetic, and existential).

These experiences lead us to consider our sensory perception and the role played by the body-mind in experiments on flow and aerial reality. After narratives by scientists and anthropologists, we now consider the philosophical field, for another way to describe and recount our experiences, helping us to become aware of the living air.

Becoming aware of the air implies *activating our sensory perception*. This is first made possible by enhancing our direct and immediate experience of the 'Life-world,' to borrow Husserl's expression

([1913]1950). Phenomenological thought opens us up to a path where our most important cognitive activities are understanding how real life makes itself present to us, and familiarizing ourselves deeply with this experience of a sensory, carnal world, before trying to measure, quantify, represent, or control it. Merleau-Ponty (1945) created the concept of 'body subject' to highlight that our bodily senses are not merely passive sensory receptors that send messages to an overhanging consciousness. In fact, our various senses converge in the perceived phenomena of the surrounding environment and provide it with coherence. The 'body subject' is not just a physical and mechanical body, but also an *embodied self*, an open and active body, intertwining with the fabric of the present, perceiving the 'rays of the world' or 'nexus of experience'.

From this perspective, perception is a dynamic activity of receptivity and creativity by which we converse with others and orient ourselves in the world, an activity that gives perspective to the world that we might inhabit it. Because the act of perception is already an act of participation, we do not need to search for external conditions that can bring us back to living air. We simply need to be aware of our bodily senses, connecting us with the 'breathing earth' (Abram 1996) and thus synchronizing our own rhythms with the rhythm of things themselves. This understanding obtained thanks to the phenomenological perspective is very close to that of the cittamātra Buddhist philosophy (also called Yogacārā school, 4th century AD, ancient India) which considers direct sensory perception as a skillful means of accessing the 'domain of thusness' (the reality as it is), which is not distorted by our patterns of thinking (Thich Nhat Hanh, 2001).

A philosophical method of this type should help us to overcome certain dualisms (subject/object, organism/environment, body/mind, sensitive/cognitive) that are grounded in our way of perceiving the world, and which prevent us from enacting the inhabitant's point of view. If perception is basically participatory (sometimes suspended when our attention is captured by artefacts), it suggests that the perceiving body is always in an active interplay relationship with the perceived phenomenon. Perception is no longer a process that allows the consciousness to interpret and organize sensations, but it is always a mutual embrace or a 'coupling', in the words of Francisco J. Varela (1991), between organism and environment. The organism persists in its own being, successfully maintaining vital constants such as a body temperature of 37° C, only because it is coupling with its environment. This sensory coupling can define a relational ontology from which the identity of no organism is ever

fixed and keeps becoming, according to the relationship woven into its environment.

Recovering the sensorial dimension of experience also brings reconnection with a creative and iterative way of knowing; in the context of the Covid-19 pandemic, many of us have rediscovered a sensual world infused with birdsong, insects flying and light waves. From this rediscovery emerges a sense of wonder and awe that we do not get when we co-evolve with telephones or other mass-produced artefacts that are built for specific functions and are thus utterly predictable. The dialogue with animate lifeforms needs the ongoing adjustments and creativity of our perception. And it is through this dialogue that we can leave our self-referential world, centered only on human language, while the flesh of language is composed of breaths, wind, rivers, and all the voices of the earth. It is also a way to extend our self-conception, from a tight ego identity to an 'ecological self' including all the relationships of which we are constituted (Naess, 2017).

The good news is that we can cultivate skillful perception by reawakening our senses and intentionally sensing with our entire body-mind. We can train ourselves in perceptual practices in order to see our ecological condition more deeply and care for it (Sewall, 1995), thus opening up new horizons in the field of education and training.

4. Recognizing the air as a living medium: issues for integrative environmental education in the Anthropocene Era

What types of learning and experience are needed to embody these narratives, activate sensory perception, and engage learners in caring for human and more-than-human worlds? In the particular case of air, how can teachers and educators help students recognize the importance of the aerial medium, pay close attention to it, and act responsibly?

As a first response, we must consider the need for high-quality science literacy on the subject of air. Scientific narratives of the living air should be present in environmental education, whether in the teaching of natural sciences (biology, climatology, etc.) or humanities (geography). Schoolchildren and students will thus be able to recognize the lifeforms that live in air, as well as the importance of air as a central element for us to inhabit the world. This science literacy includes climate and weather

literacy[3], which need to be developed, primarily, in pre-service and in-service teachers. In France, the aim of creating the *Office for Climate Education* (OCE) after the COP21 in Paris was to improve teachers' cognitive skills levels, and 20 000 scientific articles are published every year on this subject. Despite these publications, understanding of the atmosphere system and mechanisms of climate change remains very limited in most countries in the world: an analysis of curricula in 78 countries shows that only 35% mention climate change (Unesco, 2016, p. 293). And even when students gain complex and effective knowledge of climate change, as they do in Finland, how they perceive and act in the air is rarely affected (Hermans & Korhonen, 2017). It is the whole issue of climate change education, which focuses primarily on disembodied knowledge transmission, that fails to touch the experience and habits of learners.

This is why education that aims to recall the air should also consider pedagogical practices and arrangements that both engage the body-mind of students in active learning, and transform their way of inhabiting the air. From this perspective, the research group on eco-training (*Groupe de Recherche en Eco-Formation*) – developed in French-speaking countries since the 1990s – highlights the importance of outdoor learning with regard to the pedagogy of imagination (Bachelart *et al*., 2005). This approach joins the phenomenological perspective by emphasizing the potential of education *in* and *through* the environment, going beyond education on (the subject of) the environment. Eco-training takes root in a sensitive and immersive experience of the world, an eco-somatic process that allows children and teenagers to feel part of liveliness (Clavel, 2017). It continues by exploring the symbolic and poetic dimension of our relationship with the elements, following the work of Gaston Bachelard (on air: Bachelard, [1943]1992; Pineau, [1992]2015).

Eco-training strongly resonates with studies by authors who underscore the potential of narratives for coping with climate change and ecological crises (Siperstein *et al*., 2017). In classroom and training arrangements,

[3] We identified a first definition of 'climate literacy' as a result of a three-day workshop "Climate & Weather Literacy" at UCAR in Boulder (2007), bringing together a group of scientists and educators: "A climate literate person understands the essential principles of Earth's climate system, knows how to assess scientifically credible information about climate, communicates about climate and climate change in a meaningful way and is able to make informed and responsible decisions with regards to actions that may affect climate." (NOAA, 2009, *Climate Literacy: The Essential Principles of Climate Science,* Available Online (accessed 21 April 2021): https://cpo.noaa.gov/sites/cpo/Documents/pdf/ClimateLiteracyPoster-8_5x11_Final4-11LR.pdf)

these narratives may take the form of first-person narratives - including environmental autobiography (Cottereau, 2017), sumbiography (Albrecht, 2019), and ecobiography (Pierron, 2021) – or fiction and non-fiction storytelling in the first, second, or third person (writing workshops, filmmaking workshops, creative anticipation, role-plays, etc.). All these narrative practices are tools that enable students to develop extended empathy for all sentient beings, involving the ability to put themselves in someone else's mind, understand their feelings, perception, and thoughts from within, and recognize the value of their experience. In the case of air, we can for example imagine placing ourselves in the skin of a sentient being that breathes like us (an animal, an insect or even a plant or tree). We can try to feel how it is to breathe, move and interact in the air, with the body of this sentient being. To also feel how human activities affect its way of inhabiting and what kind of message we can address to humans, on behalf of this lifeform (Seed *et al.,* 2007).

Narratives, cognitive skills and sensitive experiences each contribute in their own way to returning our perception to a world *co-habited* by humans and non-humans. Including these three dimensions in a more integrative environmental education, teachers and educators can lead learners to both recognize air as a living medium that sustains their life, and generate the desire to care for it, by committing themselves to individual and collective actions.

Conclusion: from attentiveness and narratives, to care ethics

To become aware of the air, we need to carefully examine scientific and indigenous narratives, as well as the phenomenological approach. This is not only a question of insight, but also a question of ethics, as David Abram states:

> It may be that the new 'environmental ethic' toward which so many environmental philosophers aspire – an ethic that would lead us to respect and heed not only the lives of our fellow humans but also the life and well-being of the rest of nature – will come into existence not primarily through the logical elucidation of new philosophical principles and legislative strictures, but through a renewed attentiveness to this perceptual dimension. That underlies all our logics, through a rejuvenation of our carnal, sensorial empathy with the living land that sustains us (Abram, 1996, p. 69).

The power of these narratives enhanced by attentiveness is to lead us toward care ethics which consist firstly in an ethic of mindfulness, and an ability to raise awareness of what happens in our experience. It is an ethic that promotes, above all, care of our ordinary and daily reality, care of what provides and sustains the continuity of life (Gilligan, 1982; Tronto, 1993). Such attentiveness to the subtle relationships that build our world has the ability to make visible the simple gestures, regards and inhabiting knowledge that are fundamental for our life. It also has the ability to increase awareness of the interdependence between self and others, inner and outer, and human and more-than-human worlds (Laugier, 2015; Biancofiore, 2016; Barniaudy, 2020).

In fact, narratives do not impose moral principles on what should be good or bad. They create a fresh empathy that is also recognition of shared vulnerability between all elements in the living world, and from which emerges a profound feeling of conviviality with all life forms. The key is to find a way of inhabiting the worlds that include others, and not just humans, widening care circles to all the conditions that allow us to breathe in the medium of air. To activate our sensory perception and renew our manner of enacting the world, we need to remember or create meaningful narratives. Narratives that ground human desires and act in a more-than-human world, that help us to care for ourselves, others, and the air intertwining through all life forms.

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"The Anthropocene has still the rank of a scientific hypothesis. Yet, it has already sedimented in our imagination with its stories of climate change and mass extinctions, global pandemics and energy crisis, technofossils and oceanic plastic, social justice and new minerals that are changing the face (and the bowels) of the planet. Investigating this imagination from multiple angles, Narratives in the Anthropocene Era, brilliantly edited by Charles Travis and Vittorio Valentino, is an indispensable tool for situating these stories into the conceptual horizon of the environmental humanities".

(Serenella Iovino, University of North Carolina at Chapel Hill)

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