

Beyond Language

Knowing with Abiota
in Contemporary Installation Art

MATEUSZ CHABERSKI

Mateusz Chaberski

Department for Performativity Studies,
Jagiellonian University, Kraków, Poland
mateusz.chaberski@uj.edu.pl

Lecturer at the Department for Performativity Studies of the Jagiellonian University in Kraków, Poland. In 2016 he won a Foundation for Polish Science scholarship for innovative research in Humanities. His academic interests range from performance studies, affect, and assemblage theories to Anthropocene studies. In 2015, he published *Doświadczenie (syn)estetyczne. Performatywne aspekty przedstawień ((Syn)aesthetic Experience: Performative Aspects of Site-Specific Performance)* and in 2019 *Asamblaż, Asamblaż. Doświadczenie w zamglonym antropocenie (Assemblages, Assemblages: Experience in the Foggy Anthropocene)*. Together with Mateusz Borowski and Małgorzata Sugiera, he edited *Emerging Affinities: Possible Futures of Performative Arts* (transcript Verlag 2019) and with Ewa Bal *Situated Knowing: Epistemic Perspectives on Performance* (Routledge 2020).

Summary

This article scrutinises contemporary installation art that foregrounds non-linguistic ways of knowing with abiotic entities. The main focus is put on affective modes of sense-making which stage non-anthropocentric relationalities between humans and nonhumans in order to examine how those modes relate to more articulate forms of knowing. The article adopts a perspective of situated knowing (Bal and Chaberski 2020) either focusing on the author's own or other's spectatorial experiences. Specifically, three artistic projects mobilising different abiota are discussed to elucidate their implications with respect to affective and discursive knowing as well as the different aspects of abiotic ways of being that they account for.

Streszczenie

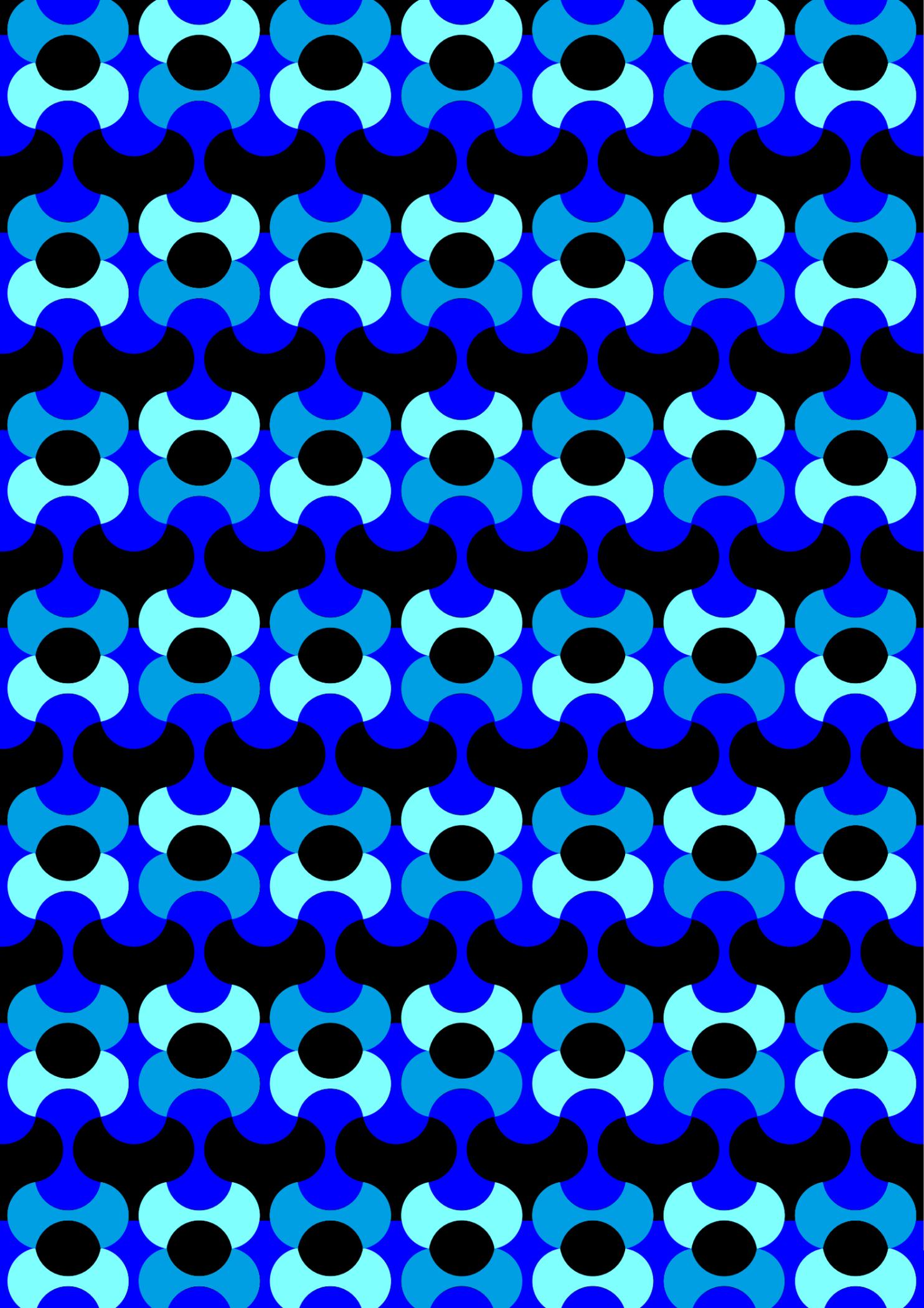
Celem niniejszego artykułu jest analiza najnowszych instalacji artystycznych, które wytwarzają pozajęzykowe sposoby poznania w relacji z abiotycznymi nie-ludźmi. Chodzi przede wszystkim o strategie afektywne, które stwarzają warunki do nawiązania się różnego typu interakcje między ludźmi i nie-ludźmi i wchodzi w rozmaite relacje z artykułowanymi formami poznania. Artykuł wykorzystuje perspektywę usytuowanego wytwarzania wiedzy (Bal, Chaberski), skupiając uwagę bądź to na własnych doświadczeniach odbiorczych autora bądź innych zapisach doświadczeń. W szczególności omówiono trzy projekty artystyczne angażujące istnienia abiotyczne, by pokazać różne aspekty ich sprawczości oraz relacje między afektywnym i dyskursywnym poznaniem.

KEYWORDS

Nonhumans, abiota, installation art, affect

SŁOWA KLUCZOWE

Nieludzie, abiotyczny, sztuki performatywne, afekt



Redefining Knowledge-Making at the Time of the Anthropocene

Let me begin with an example from *Into Eternity* (2010), a documentary by the Danish director Michael Madsen. The documentary recounts the story of Onkalo, a nuclear waste repository currently under construction in the municipality of Eurajoki on the west coast of Finland. Planned to be completed in the early 2100s, the repository is supposed to become the safest means for radioactive waste storage ever created. It comprises a network of tunnels drilled 700 metres into the local granite bedrock where conditions are more predictable than, for instance, in water-based storage pools and other overground nuclear repositories. Purpose-built copper capsules where the radioactive material will be held are designed to be self-contained so that Onkalo can be forgotten and persist without human maintenance at least for the next 100,000 years. This more-than-human timescale, delineated by the half-life of radioactive cesium and strontium isotopes, escapes human imagination and complicates how generations to come may know about the radioactive waste. This problem is expressed by the designers of Onkalo that Madsen interviews in *Into Eternity*. During the planning stage of the project, it occurred to the designers that warning signs and full documentation of the project, including multidisciplinary studies to have informed the design, to be

placed under and over the ground, may not be sufficient. Those who will need to be warned against the dangers of the deposit most probably will not speak any known language or use symbols we now claim to be universal. In fact, they might not even be human. In evolutionary terms, the planned duration of Onkalo is enough for a new form of hominids to emerge. The engineers are thus experimenting with ways of marking the site on the ground beyond language. One of the scenarios seriously under consideration is a landscape of thorns, originally designed by the architect Michael Brill and artist Safdar Abidi in 1999 for a Waste Isolation Pilot Plant in the United States but which was never realised. The forest of thorns made of concrete, 15 metres high each, is not supposed to *inform* about the nuclear waste and its potential consequences. As the engineers in Madsen's documentary contend, the landscape aims to evoke both the great scale of the project and the ensuing sense of menace and bodily harm. They hope that the 'forest' might deter those in the future who might not use any known human language-based symbolic systems from encroaching on the radioactive site.

The dilemma faced by the designers of Onkalo puts into sharp relief a larger problem of knowing in the time of the Anthropocene, the new epoch in Earth's history in which human activity has become the dominant *geological* and *meteorological* force on the planet (Crutzen and Stoermer 2000). Nuclear waste epitomises the long-lasting detrimental impact of humans on the environment. The radioactive isotopes it contains — which in minuscule doses permeate virtually all bodies on the Earth, both human and nonhuman (Caulfield 1989) — also show that in this new epoch, human activity and nonhuman ways of being are deeply entangled. In this respect, the Anthropocene subverts the modern binary opposition of culture, defined as the sole activity of humans, and nature, understood as the domain of inert matter independent from the human. Moreover, it questions the modern Western episteme predicated upon this binary whereby knowing, especially in

the sciences, is necessarily about a (human) subject gaining knowledge about a (nonhuman) object. This epistemic paradigm privileges language-based modes of sense-making to objectively describe the world from a detached distance. The Anthropocene, which foregrounds deep entanglements between the human and the nonhuman, entails a more relational approach to knowing, since knowledge always emerges from dynamic more-than-human assemblages. In this essay, I will therefore deliberately use the term 'knowing with' to suggest that knowing is virtually impossible outside close, often intimate relations between humans and nonhumans. Yet, as the need to build an evocative landscape of thorns at Onkalo alongside traditional forms of knowledge exemplifies, such an approach also requires language-based modes of knowledge-making to be supplemented by affective ways of knowing in order to account for nonhuman agency at the time of the Anthropocene. This, in turn, necessitates a critical look at existing attempts to theorise knowing with nonhumans in the new epoch.

In his article *Agency at the Time of the Anthropocene*, Bruno Latour (2015) posits a specific way of knowing with nonhumans by re-cycling the term 'performance' he introduced in his earlier work. In a collection of essays called *Pandora's Hope* (1999), Latour defined performance as actions of humans and nonhumans in laboratory experiments. In this context, the term served as a critical tool against essentialism in science studies. According to Latour, performance is not a mere outcome of what happens in the laboratory, but rather always depends upon the actions of the experimenter who, drawing on their sensory experiences and previous knowledge, registers only certain performances of an actant and names them accordingly. Thus, the attributes of an actant may change dramatically, depending on the particular experimental strategies an experimenter employs. In *Agency at the Time of the Anthropocene*, Latour expands his use of the term beyond the laboratory, arguing that artists too can register and account for performances of human

and nonhuman actants. Unlike scientists, however, artists aim less to establish objective matters of fact than to explore ‘contradictory morphisms’ (Latour 2015: 13) whereby humans and nonhumans constantly shape one another, undermining predefined notions of the nature of the world, its relations, and dominant paradigms of knowledge. Thus, Latour concludes that performances of the arts become an important epistemic tool for capturing dynamic environmental processes within the Anthropocene and their multiple effects that often escape objectivising scientific discourses and practices. In this sense, artistic performances become a perfect site for knowing with nonhumans.

However, when writing about performances of the arts, Latour focuses solely on literature, both fiction and nonfiction. His choice of a language-based medium not only neglects affective modes of knowing, crucial for the designers of Onkalo, but also impedes registering the very agency of entities such as radiation. Analysing examples of literature, Latour still understands nonhuman agency in terms of an active subject (be it human or nonhuman) actively doing something. Although such language-based discourses might well capture performances of biota, mostly animals and plants, which are easily materialised as individual entities, they can hardly account for the agency of abiota. Abiotic entities, such as radiation, rocks, fogs, and ice are those that do not conform to the biological carbon-based definition of life which entails solely biochemical organic processes such as metabolism allowing for growth and reproduction. Moreover, abiota are predominantly what eco-philosopher Timothy Morton terms ‘hyperobjects’, which he defines as ‘things that are massively distributed in time and space relative to humans’ (2011: 1). As they do not materialise in one particular space and time, their agency escapes traditional Western epistemologies that still regard them as inert matter. As contemporary new materialist theorists suggest, this way of thinking about abiota only maintains discourses and practices of settler colonialism. Not only does

such thinking contribute to the unrestrained exploitation of the planet’s resources and the ensuing dispossession of indigenous peoples who often consider the abiota as members of their collectives (Povinelli 2016), it also, as cultural geographer Kathryn Yusoff contends (2018: 66-67), fosters dehumanising forms of subjection of black bodies that have been traditionally understood as inert matter. Thus acknowledging abiotic agency may have great socio-political and ethical implications. In order to notice them, however, literature and other language-based forms of knowing like those advanced by Latour may not be sufficient. Thus I would argue that affective ways of knowing are in order.

Affective Ways of Knowing

This article aims to foreground affective ways of knowing with nonhumans in the Anthropocene and think productively through some entailing paradoxes. In this new epoch, however, and as suggested by the landscape of thorns, affect cannot be merely understood as human emotions or conventional classifications of experiences that make sense of what is felt in a given moment. Following the Canadian philosopher Brian Massumi (1995), I understand affect as a nonmental, unintentional, and impersonal bodily force which operates between human and nonhuman bodies. It flaunts the traditional essentialist concept of the human body as a self-contained entity separated from nonhumans. In his essay *The Autonomy of Affect*, Massumi claims that ‘the body is radically open’ (1995: 90). In other words, a body — not only that of a human being — becomes a site of incessant more-than-human impulses and potentialities. These impulses and potentialities are all possible states that a body can be in within a given moment, only one of which is actualised. Affect, then, is an indeterminate intensity that a body —

again in the broad sense of the term — acquires in contact with other human and nonhuman bodies. This contact, however, is not limited to proximity engendered by touch. Massumi compares affect to sea waves rippling across swathes of ocean, inducing movement in bodies across large distances. As such, affect undermines the traditional binaries of cause and effect, action and reaction, activity and passivity. As affect is a vibratory force proceeding in all directions, its effects may be attributed only retroactively, which challenges the traditional order of linear causality. Moreover, even though affect is filled with resonating motion, it is not active in the sense that it can be directed to any practical ends. As Massumi concludes drawing on Spinoza's *Ethics*, the affective potential of a body consists in its capacity to affect and to be affected. From this perspective, affective ways of knowing with abiota may become an apt way of describing this particular mode of knowledge and to account for the agency of abiota that escapes the active/passive binary.

It is important to stress that foregrounding the role of affect in knowing with abiota at the time of the Anthropocene does not mean that language-based and affective ways of knowing are mutually exclusive. For Massumi, language and affect simply belong to different, yet resonating levels of reality (1995: 86). Sometimes they amplify, sometimes they dampen one another. The present article is also caught up in this dynamic as it seeks affective ways of knowing with nonhumans whilst simultaneously facing the necessity to convey them through language. This paradoxical situation only confirms Donna Haraway's famous dictum that 'it matters what matters we use to think other matters with' (2016: 12). Writing about ways of knowing, indeed, puts great responsibility on the scholar whose choice of metaphors, terms, ways of writing, and even examples actively co-constitutes what they address. Thus, in contrast to Latour, I will not focus on literature but on contemporary installation art, precisely because it often fuses language-based and affective ways of knowing to subvert traditional Western epistemologies.

Various critical Anthropocene scholars (Davis and Turpin 2015; Zylinska 2018) suggest that contemporary installation art has become a potent site for gauging affective ways of knowing with nonhumans. Telling examples can be found in the diverse projects initiated by artists, technoscientists, and designers, generally gathered under the unsatisfactory umbrella term 'installation art' (Rebentisch 2012). The initiators of such projects not only fuse various materials, practices, and discourses from the arts and technosciences in order to mobilise flows between nature, culture, and technology, they also disrupt modern ways of thinking and being-in-the-world which arbitrarily separate these latter domains. As the Turkish eco-critic Serpil Opperman suggests, 'installations generate hope for a more emotional relationship with the planet, creating strong sensory and affective experiences' (2018: 341). Installations indeed aim less at creating meanings to be assigned to particular phenomena than to staging human experiences as assemblages of the sensory, the intellectual, and the affective in order to unsettle modern ways of thinking about abiota as inert matter. Thus, unlike Latour's literary authors, contemporary installation artists may better grasp the performances of nonhumans. As more and more artistic projects engage with various abiota in the context of the Anthropocene, looking into contemporary installation art may open up new ways of knowing with abiotic nonhumans, alternative both to traditional Western epistemologies and new materialist and critical Anthropocene studies.

By scrutinising some of the ways in which contemporary artists are positing affective modes of knowing with abiota, this article extends my recent research on 'situated knowing' (Bal and Chaberski 2020). This concept works transversally with Donna Haraway's 'situated knowledges' (1988), which in the wake of the 1990s science wars offered a feminist critique of the paradigm of scientific objectivity predicated on the dominance of the patriarchal male gaze disguised as the scientific view from nowhere. Instead, Haraway not only foregrounded the cultural situatedness of scholars (class, race, gender) as a key factor in knowledge-making,

but also posited this situatedness as the foundation of a new epistemic paradigm in which ‘objective’ knowledge emerges from different, often conflicting situated knowledges. However, while questioning the objectivity of knowledge, Haraway left the very ontology of knowledge intact. For her concept is still about ‘the know-what’ of knowledge-making — that is the concrete objects of knowledge produced by scholars. Instead, situated knowing draws on Latour’s understanding of performance as an epistemic tool to challenge ‘the know-how’ of knowing — that is the protocols and situations where knowledge is made that are inherently unstable, emergent, and in constant flux. In this context, situated knowing is about scholars ‘register[ing] sensory, cognitive and affective processes generated by art, in order to account for dynamic changes in processes of knowing’ (Bal and Chaberski 2020: 6). In other words, situated knowing is less about producing knowledge than about constantly unsettling and renegotiating hitherto accepted categories in the Western sciences and humanities, such as agency, identity, and relationality. This might be an especially potent methodology to grasp the dynamic Anthropocenic landscapes of ever-shifting human-and-non-human assemblages often staged by contemporary installation art.

In line with situated knowing, the point of departure for my following analyses is always a situated experience of visiting the installations, be it myself or other visitors. This enables me to instantly foreground the affects they generate and register their possible effects by attending to my lived/mediated experiences. Moreover, it puts into spotlight the dynamic relations between affective ways of knowing and more traditional language-driven modes of knowing as they are posited by the installations. I will be guided by three actants mobilised by three installations in which articulate knowledge is crucial for gauging affective ways of knowing. Probing this dynamic will show how affective knowing incites language-driven ways of knowing whilst linguistic knowledge is enlivened by affect and inflected with deep ethical and ecological meanings.

In 2017, I visited the Fluid Matter exhibition at the MU Gallery in Eindhoven. Part of the exhibition was *Haem* (2016), an installation by the Swedish artist Cecilia Jonsson in collaboration with the Portuguese medical biologist Rodrigo Leite de Oliveira and the Dutch metallurgist Thijs Van Der Manakker. As soon as I entered the darkened room, my attention was drawn to a glass bowl filled with water, illuminated from above by a spotlight, set on a profiled concrete pedestal that slowly rotated clockwise. A wooden compass was floating in the bowl, with its magnetic needle slightly rotating and indicating the North. From time to time, the compass gently bounced off the walls of the bowl. Curiously, even though the bowl-compass assemblage was in constant motion, I had the impression that time was standing still. This effect was amplified by the accompanying soundscape by Italian composer Marcello Sodan, reminiscent of music used for meditation. It consisted not so much of melodic lines developing in time, but of ambient sounds and the sounds of flowing water. My visual and auditory sensations gradually fusing, I entered into a hypnotic state of sorts. I simply could not take my eyes off of the unhurriedly moving bowl which threw around enchanting light effects. I carefully followed even the smallest movements of the iron magnetic needle and compass. However, my affective experience triggered by the installation did not put me into hypnosis. It left me perplexed. The significance of its affective potential only came to me later. Through my readings in contemporary philosophy and molecular biology, I understood that *Haem* gestures towards a particular materialisation of abiotic agency that not only diverges from hitherto received concepts of agency, but which also challenges what it means to be human.

In *Humankind: Solidarity with Nonhuman People* (2017), eco-philosopher Timothy Morton argues that the deepening environmental crisis calls for



Haem (2016) by Cecilia Jonsson, detail

© 2016 Cecilia Jonsson, Rodrigo Leite de Oliveira, Photo: Signe Tørå Karsrud

a new concept of agency that takes account of nonhumans and their specific ways of being. Traditional concepts of agency have been deeply anthropocentric as they attributed agency solely to an active human subject exerting its force on other humans and nonhumans, with the latter being relegated to the domain of inert matter. In order to challenge this anthropocentrism, Morton dismantles the active/inert binary by rematerialising agency as ‘rocking’, a term that ‘gathers a whole set of resonances to do with moving in place, oscillation, moving while standing still’ (Morton 2017: 179). Morton clearly departs from conventional understandings of agency as a force attributed to bodies intentionally moving from point A to point B exerting certain effects. Although rocking nonhumans do not go anywhere, they do perform specific effects. This might be exemplified by the performance of a particular abiota on which Morton’s term is predicated.

Morton’s definition of rocking deliberately explores the homophonic similarity between the English verb ‘to rock’ and the noun ‘rock’. Since supposedly immobile rocks literally guaranteed the safety of modern people, they became an instance of inert nature. As Morton argues, this way of thinking makes it possible to turn rocks into a ‘reassuringly static reserve of geo-stuff [that] waits to be cut and exploded and melted and smelted and turned into pleasant slabs of kitchen counter-top’ (2017: 180). As such, Western modernity erased all manifestations of the rock’s agency. This is visible, Morton explains, in the experience of a driver on a mountain road who is not paying attention to the warning signs of falling stones, and then is surprised that a rock splinter broke his windshield. Nonetheless, one only needs to change the scale of events to see that rocks are in constant motion. On a molecular level, for example, rock molecules vibrate on their own, taking quanta of energy from the environment. On a macro scale, determined by geological time in which an era or period is counted in hundreds of millions of years, rock masses move like liquids, spilling over the surface of the Earth, demolishing and smashing against each other.

Morton’s idea of rocking as a new concept of agency questions the active/inert binary in which abiota are usually caught. It attunes us to various scales that escape anthropocentric ways of thinking about the world in which abiotic agency manifests itself. From this perspective, the various types of oscillatory movements I experienced while visiting *Haem* might be interpreted as materialisations of this new concept of agency. However, *Haem* accounts for nonhuman agency as rocking not only as it mobilises the bowl and the compass; it also undermines the traditional way of thinking about human life, dominant in Western culture, as the result of solely biological processes such as fertilisation, cell division, and metabolism. For *Haem* shows that the creation and maintenance of human life is virtually impossible without another rocking inorganic entity: iron.

In order to understand how Cecilia Jonsson questions the traditional understanding of human life, one has to take a closer look at the compass needle. Unlike in traditional compasses, the needle in *Haem* is not made from magnetite, nickel, cobalt, or other magnetic metal extracted from the Earth. Instead, it is made out of the iron found in human blood. This is already indicated by the very title of the installation, *Haem*, which clearly refers to the group of iron that is part of haemoglobin, the protein contained in erythrocytes responsible for the transport of oxygen throughout the human body. Interestingly, Jonsson did not use venous or arterial blood, but placental blood which is much easier to obtain: whereas the former is stored in blood donation stations that make it available only to save patients’ lives, placental blood is considered medical waste and is disposed of immediately after birth. Nonetheless, placental blood actually contains the most haemoglobin of all blood types because it is responsible for the intensive oxygen exchange between mother and foetus. The film accompanying the installation documents how the artist approached women in the maternity ward of the Antoni van Leeuwenhoek Hospital in Amsterdam, asking them to donate their placenta



Haem (2016) by Cecilia Jonsson, detail
© 2016 Cecilia Jonsson, Rodrigo Leite de Oliveira, Photo: Signe Tørå Karsrud

for use in the project. As a result, Jonsson received sixty-nine placentas with a total weight of about thirty-five kilograms. She then cut them into pieces in de Oliveira's laboratory and charred them in a special furnace at 300°C to produce six kilograms of iron ore. The iron ore was sent to Van Der Manakker's workshop, where it was melted in a metallurgical furnace, adding the same amount of charcoal. He forged a small magnetic needle from a part of the steel alloy obtained in this way, which was used to construct the compass floating in a rotating bowl with water.

Haem's aim is to expose how the otherwise tacit agency of iron is in fact of crucial importance for the emergence of human life. At first glance, iron molecules contained in haemoglobin are passive: they simply circulate in the human body, carried by blood flowing under pressure, until they reach the lungs and bind to oxygen. In contrast to this apparent passivity, however, *Haem*'s oscillating compass gently bouncing off the sides of the bowl draws attention to the fact that the workings of iron are also a perfect example of Morton's theory of agency as rocking. Similar to the rocks discussed in *Humankind*, the molecules of iron contained in haemoglobin vibrate. As proven by the British biochemist Max Perutz (1997), the energy generated by electron vibrations in the iron atom cloud is a key factor in the formation of bonds between iron and oxygen. Therefore, the life-sustaining transportation of blood would not be possible if the iron atoms in the haemoglobin were not vibrating. The transport itself also takes place through the principle of rocking: as blood continually circulates between the lungs and other organs of the human body, the haemoglobin molecules carried by the blood perform a movement similar to that of the compass bumping against the bowl walls. Moreover, as Jonsson's project suggests, the work of rocking is also revealed when the placental blood circulates between the organs of the mother and the foetus in order to sustain its vital functions. Not only does the veined glass from which the bowl was made resemble the structure of the placenta, consisting of scions of different sizes that are

separated by furrows; the compass bouncing off its walls also evokes the moment when the blood of the mother and the foetus meet through the placenta, exchanging oxygen and other life-supporting nutrients.

In spite of its clear engagement with the molecular dynamics sustaining vital processes, the aim of Jonsson's project is not merely to convey articulated knowledge about the agency of iron as a rocking force generating human life. Rather, by using the moving bowl and a hypnotic soundtrack, *Haem* allows visitors to gain what Morton terms 'ecological awareness' (2017: 186). The way in which Morton understands ecological awareness has nothing to do with knowledge about the progressive deterioration of the environment, which traditional eco-activists consider insufficient for effective environmental protection. In his view, ecological awareness is an affective experience. Similar to Massumi, affect in Morton's perspective points to a situation in which the active/passive binary is subverted. In this context, ecological awareness arises when humans experience and acknowledge myriad rocking nonhumans flowing through their body, whose agency is key to their existence. However, as my analysis indicates, to grasp the importance of iron as a rocking abiotic entity crucial for human life, language-based forms of knowledge are indispensable to grasp how the iron in haemoglobin actually works. Only then can audiences realise not only that they are not the crown of existence at all but also that what they used to call 'themselves' in fact depends on the actions of other humans and nonhumans, including seemingly inert abiota. Nonetheless, although *Haem* stages affective conditions of knowing with abiota which problematise the traditional concept of a human life, it hardly touches upon the environmental relations between humans and abiota. In order to register those, let me move from affective knowing with iron to affective knowing with fog, another abiotic entity. This kind of knowing does not necessitate articulate forms of knowledge but rather exemplifies a situation where affects may incite language-based modes of knowing which in turn may deepen the experience.

Naturalculturaltechnological Environments

In *Weather as Medium: Toward Meteorological Art* (2018), New Zealand performance scholar and artist Janine Randerson recounts her experience of visiting *Fog Sculpture #94925: Foggy Wake in a Desert: An Ecosphere* (1976), an installation by the Japanese artist Fujiko Nakaya, permanently exhibited in the gardens of the Australian National Gallery in Canberra. In 1970, the artist developed in collaboration with engineer Thomas Mee a special technology to produce artificial fog by dispersing water droplets. As a result of two years of experiments, Nakaya and Mee constructed a complex system of minuscule spray nozzles fitted with microscopic needles. Passing through the nozzles under high pressure, the water breaks down into billions of particles with a diameter of less than 10 micrometres, which immediately condense in the air. Since the 1970s, the system has been used by Nakaya in collaboration with other engineers and scientists to create various installations, both in galleries and public spaces, all of which consist in dispersing artificial fog. According to Randerson, the artificial fog designed by Nakaya and Mee generates a specific affective multisensory experience for specific epistemological purposes. The fog blurs the visitor's vision, overturning the dominance of sight as a tool of orientation that in Western modernity has typically been seen as guaranteeing the most certain knowledge about the world. As Randerson was walking around the garden visiting the installation, she suddenly felt a surprising gentle touch of moisture left on her skin by the artificial fog. It was only this affective fusion of tactile and kinaesthetic experiences that made her think about the site-specific character of *Fog Sculpture #94925*. Drawing on other language-based forms of knowledge, Randerson eventually reconstructed the ecological implications of the installation. It was intended to

address the water shortage problems in Canberra's desert region, which have been aggravated by climate change ever since the installation was first shown in the 1970s. The installation was also designed by the artist as a permanent irrigation system for garden plants, saving valuable water from the nearby Canberra Cotter Dam. Today, however, *Fog Sculpture #94925* can only be watched for an hour and a half at night to prevent the tank from drying out completely due to ever more frequent draughts and the overuse of water by individual households.

Nakaya's installations trigger affective multisensory experiences to posit new ways of thinking about and relating to environments. The artist shows that knowing with artificial fog complicates dominant understandings of environments, especially those prevailing in contemporary critical Anthropocene studies. Although Anthropocene scholars convincingly argue that the environment is not a pre-existing set of ecological relations detached from human activity but rather a dynamic naturalcultural assemblage, they largely neglect technologies as important actants co-creating what is usually referred to as 'the natural environment'. Exemplary in this case is American anthropologist Anna Tsing's essay *Earth Stalked by Man* (2016). In this text, Tsing puts forward the concept of 'patchy Anthropocene' (2016: 4) in order to focus attention on specific sites where anthropogenic changes take place at different speeds and in different rhythms. The term 'patchy' is borrowed from geo-ecology, an interdisciplinary science studying the environment as a multidimensional system composed of many interconnected and interacting components. Patchy landscapes include diverse forms of terrain, fauna, and flora, which are the traditional subject of life and earth sciences, as well as historically situated human practices of inhabiting those landscapes, which are usually dealt with by forestry or agricultural sciences. Although the notion of patchy landscapes successfully serves Tsing to seek out places where cooperation brings considerable mutual benefits to humans and nonhumans, it completely disregards

the performative potential of new technologies such as carbon sequestration that — in the wake of geoengineering projects — are increasingly becoming important actants in creating environments. Nakaya's installations complicate such naturalcultural aspects of environments as the different technologies she embraces condition the very existence of the art works.

As Japanese art theorist Yuji Morioka contends, Nakaya's installations should be understood as 'environments of interactive relationality' (n.d.: para. 6 of 6). Morioka employs the term 'interactive' to point to how visitors engage with the fog as well as to the actual workings of the installation. The artificial fog is not only created through the system of nozzles described above, it is also contingent upon networks of environmental sensors and other largely automated technologies of measuring ecological parameters. For each of her installations, Nakaya scrupulously examines the topography of a given place, its fauna and flora, while she also analyses microclimatic data from the last ten years, especially those concerning the direction and strength of the wind and the average amount of rain per square metre a year. To acknowledge her sources, she includes in some installation titles the code of a particular meteorological station that she visited whilst preparing the work in question. This highlights the extremely important role of scientific research in Nakaya's artistic process, without which her work could not even be created. In her installations, the fog will only appear at the right temperature and humidity and will only last if the wind does not disperse it. What is more, Nakaya adapts the way the nozzles are arranged to the specific terrain and adjusts the frequency of fog spraying to the predicted weather conditions. However, even if she manages to cover a given place with artificial fog, she is not able to predict its behaviour as it depends on even the smallest changes in the environment. This is not just about changes in temperature or humidity, which can make a dense, heavy fog turn into strips of fine mist falling to the ground in

a matter of seconds, or disappear completely, despite the proper functioning of the nozzles. The fog also reacts to movements of human and non-human bodies, either spreading or thickening unexpectedly in front of them, depending on the speed and direction in which the bodies are moving. This aspect of Nakaya's artificial fog is best illustrated by the work *Opal Loop / Cloud Installation #72503* (1980), which the artist designed in collaboration with American choreographer Trisha Brown.¹ The four dancers perform a repetitive choreography, dancing not so much with each other as with the constantly and unpredictably changing artificial fog. This example clearly demonstrates that Nakaya's installations also posit a particular way of relating to naturalcultural-technological environments through attending to their indeterminate effects. In order to understand this indeterminacy, another look at the findings of Anna Tsing is helpful.

In *The Mushroom at the End of the World: On the Possibility of Life in Capitalist Ruins* (2015), published a year prior to *The End of Man*, Tsing foregrounds indeterminacy as the profiling characteristic of relations between humans and nonhumans at the present time of disrupted ecologies and environmental catastrophes. In her approach, indeterminacy is neither about phenomena which are hard to describe with precision, nor about the indeterminacy principle in quantum physics that defines the limits of the accuracy with which certain physical qualities can be described. For Tsing, indeterminacy is a pointer to unexpected, often contingent events that bring about affective experiences and unpredictable effects. In *The Mushroom at the End of the World*, she analyses numerous instances of such indeterminate events. Paradigmatic in this context is a situation in which a group of matsutake mushroom

1. An excerpt of *Opal Loop / Cloud Installation #72503* (1980) by Trisha Brown and Fujiko Nakaya can be seen at https://www.youtube.com/watch?v=_b6zJl8Wp9k [Accessed 27 December 2020].

pickers, whom she accompanied in the forests of Oregon, unexpectedly found a beautiful specimen after hours of foraging. These experiences of foragers not only made her patient but also extremely attuned to the minutiae of the environment. What is of utmost importance to Tsing is that such indeterminate events entail contingent encounters between humans and nonhumans that always lead to a concrete and often unpredictable change in their life practices or modes of existence. Fungi are prototypical in this respect as they do not have a determinate body but change shape, often radically and unexpectedly, in response to their encounters with other environmental actors and even the slightest modifications in their substrate. However, even though indeterminacy allows Tsing to capture the transformative potential of indeterminate aspects in human-nonhuman environmental relations, her findings are restricted predominantly to the relations between humans and the biotic, matsutake mushrooms that she follows across naturalcultural worlds in her book. Moreover, indeterminacy becomes an epistemic tool limited to her own expert practices of knowing. Nakaya's installations push this further not only by staging contingent relations in naturalculturaltechnological environments, but also by extending this indeterminacy to non-expert ways of knowledge-making. This may be illustrated by the installation *Veil* (2014), where particularly indeterminate performances of artificial fog completely transformed the status of the piece for visitors.

In *Veil*, Nakaya generated her artificial fog to cover The Glass House, a modernist house made of glass designed by the American architect Philip Johnson and built in 1949 in New Canaan, Connecticut. The indeterminate effects brought about by the installation might be seen in one of the movies documenting the piece.² The status of the work changes dramatically depending on the affective experiences of visitors

encountering the unpredictable fog and meteorological conditions. As the film documents, in windless weather the building literally melts into an artificial fog and visitors close to it had to be careful not to fall on the glass walls. Extending Johnson's idea of invisible architecture, Nakaya's work contributed to the architect's aim to fully integrate the buildings into their surroundings. The work, however, had a completely different effect when the wind broke — then The Glass House became perfectly visible and its foggy walls seemed to be made of white, opaque material. This could radically change the status of *Veil* which resembled more a so-called 'emballage', an artistic genre which consists in wrapping, packaging, or covering up objects, architecture, or nature. Whereas Johnson tried to hide architecture, the creators of emballages, such as Tadeusz Kantor, packaged objects to emphasise the material presence of what was hidden. Such trajectory of experiences of those visiting *Veil*, as recorded by the movie, clearly shows that knowing with abiota foregrounds indeterminacy as an inherent characteristic of naturalculturaltechnological environments that change dramatically depending on the affective experiences of those relating to them. Unlike in Cecilia Jonsson's *Haem*, in Nakaya's installations articulate forms of knowing are not necessary for the audience to embrace aspects of the abiotic agency in naturalculturaltechnological environments. They may only deepen the audience's awareness of indeterminacy as our common experience at the time of the Anthropocene. However, language-based ways of knowing may often block our ability to grasp the political and ethical dimensions of abiotic agency, especially in the face of the ongoing ecological crisis. The function of affective ways of knowing in this regard may be exemplified by an installation which mobilises the abiotic entity perhaps most pressurised by anthropogenic climate change: ice.

2. Opening of *Veil* (2014) installation by Fujiko Nakaya, <https://vimeo.com/96056770> [Accessed 27 December 2020].



Overview of *Ice Watch* (2015) by Olafur Eliasson and Minik Rosing
© Studio Olafur Eliasson. Photo: Martin Argyroglo

Abiotic Matters of Care

In December 2015, the installation *Ice Watch* (2014) by the Icelandic artist Olafur Eliasson and the Danish geologist Minik Rosing was presented at the square in front of the Pantheon in Paris. It comprised twelve blocks of ice with a total weight of 112 tons arranged in a circle resembling the megalithic structure from Stonehenge. The ice was transported by hired cargo ships from the Arctic Sea where it was floating after one of Greenland's glaciers had calved as a result of climate change. It is no coincidence that the title of the installation refers to clocks and the arrangement of twelve blocks in the square alluded to the face of an ancient sundial. The installation acted indeed as a symbolic clock measuring the time that separates mankind from inevitable ecological disaster. Eliasson and Rosing's aim was to bring the problem of global warming literally closer to people. The issue was at the heart of the United Nations COP21 summit on climate change, which continuously took place in Le Bourget, just outside the city, and ended with the signing of an agreement to phase out Western countries from coal-based economies. In this context, the installation's aim was clearly ecopolitical. Touching the ice from a glacier, which has a much lower temperature than the ice from our refrigerators, and observing its rapid melting served to convince visitors of the validity of the pro-ecological solutions discussed at COP21. As Eliasson and Rosing declared on the project's website,³ *Ice Watch* was intended to contribute to increasing environmental awareness and even to provoke society to take urgent

action to improve the state of the climate. Shortly after its presentation, however, the installation began to trigger different, often vehement reactions. On the one hand, critics of Eliasson and Rosing, mainly eco-activist groups, argued that rather than prompting anyone to take action, the artwork became another tourist attraction. *Ice Watch* also left a significant carbon footprint given the amount of carbon dioxide that went into the atmosphere during the shipping of the ice. On the other hand, the Internet was flooded by the images that testify to the enormous affective potential of this work. They usually depict people gently stroking, cuddling up, and even crying in front of the ice. Those reactions not only demonstrate how the installation prompted strong emotional responses, but also point to a particular ecopolitical awareness engendered by knowing with abiotic nonhumans in contemporary installation art that foregrounds the affective.

The reactions to *Ice Watch* show that the ecopolitical potential of knowing with abiotic nonhumans does not conform to the discourses and practices of traditional eco-activists, developed in the 1970s and 1980s. The installation does not aim, for example, to initiate the protests that Greenpeace has been encouraging since 1971 in the spirit of civil disobedience and direct action. Such protests are intended to force various institutions and organisations to take environmentally friendly measures or to reduce environmentally harmful practices. As Christel Stalpaert convincingly argues (2018: 215-219), this type of activist strategy, although necessary for strategic reasons, reinforces the idealised image of unspoiled Nature as an independent sphere of life rooted in the European Romantic tradition. Above all, such activist strategies are based on the anthropocentric assumption that by protecting nature, we protect human life in the first place. Moreover, in justifying their actions, activists invoke instances of factual knowledge, mostly the results of scientific research and analyses of the damaging role of the technologies employed by companies, industries, and other businesses. In contrast,

3. As the Paris installation website has been discontinued see the website for the most recent exhibition in London. Olafur Eliasson, Minik Rosing, *Ice Watch*, <https://icewatchlondon.com> [Accessed 25 May 2021]



Visitor's reactions to *Ice Watch* (2015)
© Studio Olafur Eliasson. Photo: Martin Argyroglo

the intense tactile impressions designed by Eliasson and Rosing primarily served to provoke experiential interactions between human bodies and blocks of ice. When visitors touched them, a rapid heat exchange took place, which staged an intimate interaction between the human and the nonhuman. Thus, unlike traditional eco-activist discourses and practices, *Ice Watch* gestures towards a rather post-humanist approach to ecopolitics where human-nonhuman interaction is central. Such ecopolitics also fosters a particular way of knowing with abiota.

Eliasson and Rosing's installation shows that the ecopolitical potential of contemporary installation art mobilising abiota consists in their ability to transform the knowledge about global warming into what the American philosopher of science and technology Maria Puig de la Bellacasa (2017) terms 'matters of care'. This concept aims to critically revisit existing views regarding the production of knowledge in science and technology studies. The point of reference here is clearly Bruno Latour's 'matter of concern' (2004), a term he introduced to replace his own notion of 'matter of fact', which he had developed ten years earlier. While the latter denotes material-discursive practices that aim to produce the so-called 'objective knowledge' deconstructed by science and technology studies scholars, the former aims to show that the work of deconstruction is not enough. Noting that, from the beginning of the twenty-first century onward, the critique of the sciences has often been used reactionarily to question climate change, Latour argues that scientists should transform matters of facts into matters of concern, by which he means they should pay attention to knowledge after they have produced it in order to be able to defend their findings against others. As Puig de la Bellacasa points out, since concern and care have the same Latin etymology tracing back to *cura* (care, responsibility), they denote related but slightly different affective states. Concern means, above all, the anxiety that arises as a result of thinking about a problem. Although it can cause very strong affective sensations, it does not

involve an intimate sense of belonging to the collective of humans and nonhumans affected by the problem. This intimacy, pertinent to caring, is what Puig de la Bellacasa recognises as crucial especially at a time of ever-deepening eco-crisis.

According to Puig de la Bellacasa, producing matters of care 'is about finding ways to re-affect an objectified world' (2017: 64). The objectified world here means, of course, the effect of knowledge-making practices in modern sciences based on the paradigm of scientific objectivity — or what Latour calls the 'matters of fact.' Observing the world from a cool distance, scientists create the impression that nonhumans are only the object of their research and do not actively contribute to it. From this perspective, re-affecting is tantamount to the need to restore the affective potential of scientific research in order to expose the agency of nonhumans that we need to care about. It should be noted, however, that Puig de la Bellacasa does not understand care as an unspecified feeling of anxiety caused by a difficult situation, such as — in this case — the climate crisis. Drawing on the findings of American feminist political philosophers Joan C. Tronto and Bernice Fischer, she adopts a generic definition of care. As she writes, caring

includes *everything that we do* to maintain, continue and repair 'our world' so that we can live in it as well as possible. That world includes our bodies, our selves, and our environment, *all of which we seek to interweave in a complex, life-sustaining web* (2017: 3).

This passage succinctly indicates that caring in Puig de la Bellacasa's sense goes far beyond human emotional responses. Care is understood here as a concrete material practice with great potential to question the status quo and undermine scientific objectivism. However, Puig de la Bellacasa does not advocate a normative ethics that *a priori* defines what to 'live as well as possible' in 'our world' should mean. Instead,

she foregrounds how matters of care emerge from specific material-discursive entanglements where affective knowing with nonhumans takes place. For Puig de la Bellacasa, situations of knowing through touch are prototypical in this respect.

Unlike sight, which is central to Western epistemological systems, touch entails embodied practices of exploring the world. It involves not so much the cool, objective distance from which researchers traditionally observe the phenomena that are of interest to them, but close contact with the subject of research. It should be emphasised, however, that Puig de la Bellacasa does not promulgate a romantic understanding of touch as the most proximate of the senses offering direct access to the world. She is rather interested in different kinds of technologically mediated tactile experiences triggered by contemporary technoscience: from haptic technologies of artificial leather used in robots, through augmented reality technologies that allow computer players to touch objects in the game, to medical interfaces used by surgeons who perform operations at a distance. According to Puig de la Bellacasa, these technologies not only serve to produce often speculative ways of knowing the world through touch, challenging the traditional binary opposition between direct and mediated experience; they can also become an apt cognitive tool in a world where people increasingly use digital media to get into contact with each other at a distance. Moreover, due to their interactive nature, haptic technologies allow us to see an extremely important aspect of so-called ‘matters of care’: reciprocity. One cannot touch a human or nonhuman body without being touched by it. From this perspective, touch becomes a materialisation of practices of knowledge-making based on the embodied and situated nature of experience, at the same time indicating that there is always a close, though not necessarily direct, mutual relationship with the subject of one’s research.

Ice Watch clearly stages climate change as a matter of care by inviting visitors to touch the ice, yet it also shows that knowing with abiotic nonhumans may also enact caring through the sense of hearing. At the press conference opening *Ice Watch*, the second initiator of the project, Minik Rosing, stressed that one of the purposes of the installation was to evoke specific auditory experiences:

Put your ear to the ice and he will tell you a story that goes back to ancient times. After all, the glaciers were made of snowflakes that fell 10,000 years ago. So they still remember the times before man introduced carbon dioxide into the atmosphere
(2015; transcript by the author).

In encouraging visitors to put their ear to the ice, the geologist further referred to a characteristic sound, reminiscent of the crackling sound of a burning log, which emerges as air is released from the melting ice. This affective acoustic experience too served to transform the knowledge of global warming into a matter of care. It turned the ice into a nonhuman witness of history, which seemed to whisper into the visitors’ ear the story of past times, in which man has not yet polluted the environment. Even though it may seem that *Ice Watch* aimed to create a matter of care primarily by evoking an uninterrupted sensory aural impression, a closer look shows that such an experience can only arise under very specific conditions. Visitors to the installation could only ‘hear the ice’ if they got as closely as possible to the ice and when the sounds of the city did not interfere with the subtle crackles. This is shown by the video that one of the *Ice Watch* visitors recorded on her cell phone when she strolled through the square in front of the Pantheon at night.⁴ Unlike other audio-visual materials available on the Internet documenting the

4. *Ice Watch Paris* during COP21, Keri Coles Photography, https://www.youtube.com/watch?v=1CEP_eg8WKY&t=6s

installation, only this one registered the sound intended by Rosing. This example shows that it was not enough to just put an ear to the ice to learn the history of ice. The matters of care performed by *Ice Watch* relied to a great extent on other abiota, including recording technologies, which importantly contributed to their emergence. Once they did, they circulated on the Internet where they could potentially affect even larger groups of people than those physically present at the Pantheon square. Due to the nexus of abiotic entities mobilised by Eliasson and Rosing, the affective ways of knowing could not only transform language-based knowledge about the ecological catastrophe into matters of care for the melting ice, but also reach audiences wider than those to which artistic events or scientific articles alone could ever appeal.

The examples discussed here clearly demonstrate that contemporary installation art is a fertile ground for positing affective ways of knowing with abiota at the time of the Anthropocene. These works stage different dynamic relations between affective and articulate, language-based modes of sense-making that may necessitate, deepen, and enliven one another. Without attending to these often radically different dynamics, it is virtually impossible to understand the potential of installation art to register and account for a specific type of abiotic agency that flaunts the active/passive binary, foregrounds the indeterminate character of contemporary naturalculturaltechnological landscapes, and demonstrates how matters of care for abiota are undergoing dramatic changes due to the ongoing ecological crisis. What is of utmost importance here is the political and ethical dimension inherent to affective knowing which often goes unnoticed once we focus solely on language-based modes of knowledge-making. In this respect, the inquiry offered in this article serves as an invitation to broaden the scope of our corpora to be analysed at the time of the Anthropocene. By delving deeper into the performances of abiota, we may explore other affective ways of knowing with a view to understand even better the ecological and epistemological problems we are facing today.



Bibliography

ARCTIC ICE ART DISPLAYED IN PARIS. 2015.

https://www.youtube.com/watch?v=Tpe4o9_n8AM

[Accessed 23 September 2020]

BAL, EWA AND CHABERSKI, MATEUSZ. (EDS.). 2020. *Situated Knowing: Epistemic Perspectives on Performance* (London and New York: Routledge)

PUIG DE LA BELLACASA, MARIA. 2017. *Matters of Care: Speculative Ethics in More than Human Worlds* (Minneapolis: University of Minnesota Press)

CAULFIELD, CATHERINE. 1989. *Multiple Exposures. Chronicles of the Radiation Age* (Chicago: University of Chicago Press)

CHABERSKI, MATEUSZ. 2020. 'What Performativity Scholars Can Learn From Mushroom: Situated Knowing in Polyphonic Assemblages', in *Situated Knowing: Epistemic Perspectives on Performance*, ed. by Ewa Bal and Mateusz Chaberski. (London and New York: Routledge), pp. 171-188

CRUTZEN, PAUL AND STROEMER, EUGENE. 2000. 'The Anthropocene', *IGBP Newsletter*, 41: 17-18

DAVIS, HEATHER AND TURPIN, ETIENNE (EDS.). 2014. *Art in the Anthropocene: Encounters Among Aesthetics, Politics, Environments and Epistemologies* (London: Open Humanities Press)

ELIASSON OLAFUR, ROSING MINIK, Ice Watch, <https://icewatchlondon.com>
[Accessed 25 May 2021]

HARAWAY, DONNA, 1988. 'Situated Knowledges: The Science Question in Feminism and the Privilege of Partial Perspective', *Feminist Studies*, 3: 575-599

LATOUR, BRUNO. 2014. 'Agency at the Time of the Anthropocene', *New Literary History*, 45: 1-18

— **1999.** *Pandora's Hope: Essays on the Reality of Science Studies* (Cambridge, Massachusetts: Harvard University Press)

— **2004.** 'Why Has Critique Run out of Steam? From Matters of Fact to Matters of Concern', *Critical Inquiry*, 30: 225-248

LOWENHAUPT-TSING, ANNA. 2015. *The Mushroom at the End of the World: On the Possibility of Life in Capitalist Ruins* (Princeton: Princeton University Press)

MASSUMI, BRIAN. 1995. 'The Autonomy of Affect', *Cultural Critique*, 31: 83-109

MORIOKA YUJI. *Interactive Landscapes*, transl. by Berth Winter,
<http://processart.jp/nakaya/e/> [Accessed 23 September 2020]

MORTON, TIMOTHY. 2017. *Humankind: Solidarity with Nonhuman People* (London and New York: Verso)

— **2013.** *Hyperobjects: Philosophy and Ecology after the End of the World* (Minneapolis: University of Minnesota Press)

OPPERMANN, SERPIL. 2018. 'Installation', *Environmental Humanities*, 10.1: 338-342

PERUTZ, MAX. 1997. *Science is Not a Quiet Life: Unravelling the Atomic Mechanism of Haemoglobin* (Singapore: World Scientific)

POVINELLI, ELIZABETH, 2016. *Geontologies: A Requiem to Liberal Capitalism* (Durham and London: Duke University Press)

RANDERSON, JANINE. 2018. *Weather as Medium: Toward Meteorological Art* (Cambridge: The MIT Press)

REBENTISCH, JULIANE. 2012. *Aesthetics of Installation Art*, trans. by Daniel Hendrickson and Gerrit Jackson (Berlin: Sternberg Press)

STALPAERT, CHRISTEL. 2019. "'This Body is in Danger!' On Ecology, Protest, and Artistic Activism in Benjamin Verdonck's "Bara/Ke" (2000)' in *Emerging Affinities: Possible Futures of Performative Arts*, ed. by Borowski, Mateusz, Mateusz Chaberski, and Małgorzata Sugiera (Bielefeld: transcript Verlag), pp. 211-236

TSING, ANNA, BUBANDT, NILS, AND GAN, ELAINE (EDS.). 2017. *Arts of Living on a Damaged Planet* (Minneapolis: University of Minnesota Press)

TSING, ANNA. 2016. 'Earth Stalked by Man', *The Cambridge Journal of Anthropology*, 34.1: 2-16

YUSOFF, KATHERYN. 2018. *A Billion Black Anthropocenes or None* (Minneapolis: Minnesota University Press)

ZYLINSKA, JOANNA. 2018. *The End of Man: A Feminist Counterapocalypse* (Minneapolis: Minnesota University Press)