

Shifting Paradigms: The Relationship between Nature and Humanity in Contemporary Art

Alicja Serafin-Pospiech

The muffled syllables that Nature speaks
Fill us with deeper longing for her word

George Santayana, "Premonition" (1901)

Modernity has upheld the categorisation of the world's subjects and phenomena into those belonging to the realm of nature and those belonging to the realm of culture. This division comes from the long tradition in Western philosophy that distinguishes the intellect from sensation and emotion.¹ The rational products of the human mind are separated from its unconscious, emotional reactions, which are perceived as connected to something more primal and natural. Many works of contemporary art focusing on emotion, fleeting sensation and ephemeral phenomena are changing those paradigms. In these works, sensation leads the audience to interpretation, dissolving the barrier of culture and intellect separating humanity from the natural world.

The birth of immersive art, which is often based on current technical advancements, comes along with technological progress and the emergence of neuroaesthetic studies.² In the works of authors who draw from research in neuroaesthetics, the connection between the art object and the viewer is based on the neural reaction

¹ Salah and Salah, "Technoscience Art," 150.

² *Ibid.*

created on the biological level.³ The body's reaction leads the mind to interpretation, and what was formerly categorised as biological and cultural now intertwines, functioning in flux between one and other.⁴ Since artworks have freed themselves from the boundaries of the traditional media (such as the canvas plane), the exhibition space has become the field for manipulation. Artistic expression has given birth to immersive art, which can occupy entire rooms and buildings of museums and galleries. Simultaneously, the environmental crisis emerges as a theme in many artists' works, which focus on recasting the human/nature dichotomy present in the previous millennium. Nature becomes the sole theme in exhibitions and artworks which present humanity's control over the natural world as an illusion.

This article uses neuroaesthetic methods to investigate what kinds of artistic strategies provoke the audience's specific emotional and neural responses and how those responses lead to the interpretation of the artworks. These strategies are reflected in the artworks of Studio Drift, Olafur Eliasson and Lee Bororson, all of which are focused on the condition of the humanity-nature relationship. The theme of the artworks I analyse in this article is the dire future of our species and the natural world. As the dichotomy between viewer and object is abolished in these immersive artworks, acts of seeing/sensing and interpreting intertwine. Neuroaesthetics-based analysis, which focuses on the observer's bodily sensations and emotions, can help us understand how the artworks respond to the changing hierarchy of the humanity-nature relationship. The shift in the relationship between humanity and the environment it inhabits can be traced to paradigms present in contemporary philosophy.

Between culture and nature, mind and body

Definitions of what is natural and what is cultural changed significantly at the end of the twentieth century. Discussions surrounding the effects of human activity on the environment have

³ See, for example, Onians, "Art, the Visual Imagination and Neuroscience," 182-188. For more works on neuroaesthetics: Kędziora and Onians, *Basic Bibliography*.

⁴ Kędziora, "Niezauważona i rewolucyjna neurohistoria sztuki," 228-231.

influenced how we conceptualise nature and in what way humanity has positioned itself in relation to it. While postmodernist theory often focuses on studying the influence of culture on our perception of the world, more current research poses questions about the natural bases of different cultural phenomena. Scientific discoveries and studies of empirical experience have led philosophers to reframe nature as an ontological problem. The questions of what is natural and what is human-made, what is natural and what is cultural, are being disputed.

In his book *We Were Never Modern* Bruno Latour points out that the separation between the cultural and the natural is a notion coming from modernity. According to him, this dichotomy is a product of the 20th century, which positioned humanity and its cultural production higher on the hierarchy of things, while positioning nature and what is natural as phenomena subject to human control.⁵ This false construct allowed us to see nature as the “raw material of culture,” an object to be manipulated and controlled, deprived of its agency.⁶ In this view, humans and the rational human mind stood above what is natural, biological and unconscious—things which pose no threat to the wonders and powers of human-made objects, science and technology. The discoveries of a hole in the ozone layer and global warming have provided proof not only that humanity cannot separate itself from nature, but also that humanity can be endangered by the environment.⁷ This brought Latour to reject the paradigms of modernity, arguing that we need to see humanity/nature and body/mind as interconnected entities in a constant process of influencing each other.

Latour critiques the postmodern approach as well, for even though it rejects the modern cultural/natural dichotomy, it emphasises the cultural and ultimately disregards ideas of objective materiality and human ability to influence natural matter.⁸ Postmodern views base themselves on subjectivity and, according to

⁵ Latour, *We Have Never Been Modern*, 35-39.

⁶ McKey, *Repositioning Neuroaesthetics*, 73.

⁷ *Id.*, 71.

⁸ Latour, *Politics of Nature*, 191.

Latour, reject belief in reality.⁹ This critique of postmodernism is also present in neuroaesthetic researchers' works. Łukasz Kędziora states that the postmodern discourse omits the first step in experiencing art—seeing—and moves the process of analysis straight to interpretation.¹⁰ He critiques postmodern authors' focus on disputing social connotations, while the object itself and the formality of the artwork seem to disappear. Kędziora's art history research shifts focus to the materiality and visuality of the artwork rejecting views stemming from the modern view of the world. The approach is therefore not postmodern, but a-modern, creating new notions of what is cultural and what is natural. The result is the merging of biology and culture, creating an *assemblage* in which nature and humanity are intertwined, with the cultural and the biological influencing reality at the same level. Examining the connections between cultural and biological phenomena can help us to understand the contemporary relationship between humanity and nature.

Seeing/interpreting

The main problem at the core of the dispute surrounding the use of neuroaesthetic knowledge in art analysis is the dichotomy of presence and representation in a work of art, which separates the act of seeing and experiencing art from looking for its meaning in the cultural field.¹¹ Theories that take presence as their focal point see artworks first as images and then, later, as texts to be read. Theories focused on representation, on the other hand, concentrate on associating artworks' components with their meaning.¹² For representatives of both approaches, the neuroaesthetics method is not convincing, because it makes no clear distinction between what comes from the socio-cultural realm and what is biologically determined. Sally McKey argues in her dissertation that aesthetics is an ongoing dialogue between nature and culture.¹³ She demonstrates

⁹ *Ibid.*

¹⁰ Kędziora, *Wizualność dzieła sztuki*, 189.

¹¹ McKey, *Repositioning neuroaesthetics*, 53-56.

¹² *Id.*, 54. Sally McKey is referring to the Didi-Huberman's critique of Panofsky's Iconological method.

¹³ *Id.*, 32.

that neuroaesthetic research sees the products of the mind and psychology as a part of the body, so that sensorial reaction to art becomes part of the socio-cultural model. If the body's response is also culturally determined, the dichotomy between the body and the mind is abolished.

The difficulty in creating a bridge between neural response to and interpretation of the artwork is partially resolved in the work of David Freedberg. In his method, the main concept bridging the two is memory.¹⁴ When we approach an artwork, what we see and experience is influenced by our memories and cultural background. Freedberg does not overlook this social and personal aspect of perception. In the article "Memory in Art" he introduces two concepts of memory: direct memory and indirect memory. Direct memory is a basic neural response as the body reacts to the presented art. This response on bodily and neurological levels is a basis for the awakening of "indirect memory"—the memory created from our experiences, the cultural artefacts we have encountered, and everything else that we store in the part of the brain responsible for memory. Bridging these two notions of memory allows Freedberg to connect the findings of neuroaesthetics to artworks' meanings. Analysing Rogier van der Weyden's "Descent from the cross," Freedberg recalls viewers' testimonies of their reactions to this work of art, which focus on emotions the viewers expressed after encountering it.¹⁵ Freedberg's method is interesting because it provides an association between the "emotional" and sensorial response and memory, which holds the socio-cultural connotations we looked for in theories focused on representation.

This method is especially relevant to the interpretation of artworks that refer to the fragility of the contemporary human condition. Since these artworks undermine the humanity-nature dichotomy, it is necessary to explore whether certain artistic strategies connect the acts of reception and interpretation, thus intertwining what art history theories deem as biological and cultural. Freedberg's method, in which both of these modes are considered, allows the artwork to be examined comprehensively.

¹⁴ Freedberg, "Memory in Art," 337-38.

¹⁵ *Id.*, 343-344.

Capturing beauty and captivating attention

In 2018, a solo exhibition of the Studio Drift collective called *Studio Drift: Coded Nature* was held at the Stedelijk Museum in Amsterdam. While the show was on view, I visited the museum for the first time. Studio Drift's bizarre, very technical, and yet somehow ephemeral and delicate creations caught my eye. What particularly captured my attention, though, were the different reactions of the audience: while the viewers moved quickly between the paintings, sculptures and objects on view in the museum's permanent exhibition, the rooms occupied by the Studio Drift show were filled with observers. The viewers were lying on the museum's floors, changing positions before the objects and trying to get the most out of the experience of encountering art. Studio Drift's constantly moving, shining objects seemed to enchant the audience. Is it the meaning behind the art that casts the spell, I wondered, or is it the pleasing sensation, the feeling and the emotion that comes from aesthetic experience? Where does feeling stop and interpretation begin? Can the two coexist in an ongoing interplay?

The artistic creations of Studio Drift, Olafur Eliasson and Lee Boroson share similar artistic qualities: They are full of colour and movement, filling the gallery space with objects. The works' structures are created with the viewer's reaction in mind: the artists often work with a specific space, and they consider how the viewer might encounter the objects. The artists use a lot of light, colour and movement to make their objects visually gripping. In the article "Neuroaesthetics: The Cognitive Neuroscience of Aesthetic Experience," the authors refer to George Santayana's notion of beauty. Santayana explains that people are "drawn to aesthetic features of an object and its environment."¹⁶ They conclude something quite obvious to the connoisseurs of the visual arts: that aesthetic features play a major role in determining the influence that the object has on the observer. Santayana, a philosopher, rejects belief in the metaphysical world and positions beauty as something that comes from the natural and aesthetical judgment rooted in sensory response. This view comes from the branch of philosophy known as naturalism. According to Alberto Marinho Ribas Semeler,

¹⁶ Pierce et al., "Neuroaesthetics," 265-79.

theories of empirical experience go through a constant process of naturalisation, and the contemporary epitome of such theories is neuroaesthetics.¹⁷ Semeler defines naturalisation, following Edmond Couchot, as “a philosophical branch which aims at defining what it is to be human, at times in a reductionist manner, addressing natural phenomena, submitted to the rules and laws of nature just like any other object in the world.”¹⁸

Santanaya’s views anticipate current discussions about culture and nature, laying the groundwork for neuroaesthetic studies defining the biological basis of empirical experience. According to the radical naturalisation perspective, an artwork is also a natural and biological object, because it originates from human activity, which is necessarily subject to the laws of nature. Identifying the biological basis of empirical experience, therefore, leads to determining the natural sources of art creation and aesthetic judgment.

Returning to the works of Studio Drift, Olafur Eliasson and Lee Boroson, their especially captivating usage of light—ensuring that the objects will attract the viewer’s attention—creates a longer-lasting neural connection between the observer and the object. The process of sensory reaction is not instant but temporal, and therefore the viewer needs to spend some time with the art and reflect on the message that their body is sending. Assuring that the art is aesthetically pleasing guarantees the audience’s positive judgment of its beauty and, further, leads to the art’s presence gripping the audience. According to studies on emotional responses to installation art, immersive artworks, relying on the use of light and colour, provoke an emotional reaction that aligns with the curatorial and expert discussions. This is not the case with art based on more traditional media.¹⁹ The researchers found out that even lay viewers can be led by their emotional response to the interpretation the artists intended. This suggests that identifying the sensory and emotional reaction, which Freedberg labels as direct memory, should be part of an artwork’s examination, as this reaction is where the initial source of its meaning lies. This methodological approach

¹⁷ Semeler, “Neuroaesthetics,” 284.

¹⁸ *Id.*, 286.

¹⁹ Pelowski et al., “Capturing Aesthetic Experiences,” 19-20.

will guide the analysis of artworks by Studio Drift and Olafur Eliasson presented below.

Studio Drift—hybrid forms and neuroaesthetics

In Studio Drift's exhibition at the Stedelijk, two installations captured the audience's attention the most: kinetic objects resembling flowers, titled "Meadow," and "Shylight" (fig.1). According to the findings of neuroaesthetics, experiencing an artwork provokes a reaction in the viewer's neurons.²⁰ Looking at



kinetic sculptures awakens the part of the brain that is responsible for perceiving movement. If the perception of movement is awakened, the body becomes more eager to react with its own movement.²¹ Studio Drift often focuses on creating moving objects resembling natural forms. The artworks

"Shylight" and "Meadow" are made with this artistic strategy in mind—the featured objects are moving lamps hanging in a cluster from the ceiling. The lampshades' forms resemble flowers, blooming

with the help of a complex wiring structure. As we see in the picture, viewers were eager to interact with these moving objects. Some people decided to lay on the ground to better experience the artwork sensorially without any disruptions.²² This way, the body as a whole is captivated by "Shylight" and "Meadow." According to neuroaesthetic research, the viewer positions their body in order to connect to the artwork the most. Interpretation is accessible if we

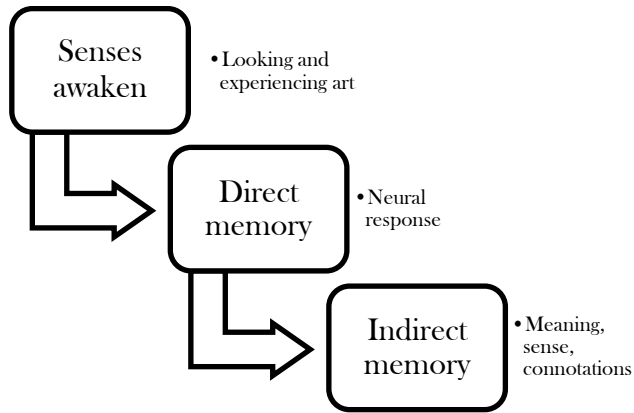
²⁰ Pierce et al., "Neuroaesthetics," 267-70.

²¹ David Freedberg refers to the Damasio's studies on this matter in *Memory in Art*, 341.

²² Viewers often react similarly to the hanging painting, trying to position their body in the most desired way before/in relation to the image plane.

experience it through the senses and the initial neural and emotional reaction guides the mind towards deeper understanding.

Applying David Freedberg's method to the works of Studio Drift yields interesting results. The reaction of the viewer to an artwork, according to Freedberg, can be summarised in the scheme presented below:



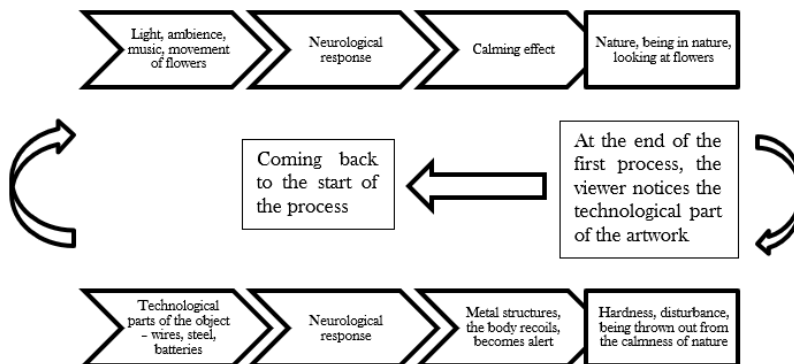
Freedberg uses this schema to analyse the relationship between a viewer's sensory response and the meaning that the viewer interprets. Many viewers of the Studio Drift show acknowledge that the objects provoke a sensory response. These viewers describe the objects as "pretty, captivating." According to the Stedelijk Museum's announcement of the Studio Drift exhibition, "[t]he works' tranquil beauty invites us to pause and experience the wonder of what is unfolding—to enjoy a few minutes of stillness in our hectic, fast-paced, digital world."²³ The artworks, which mimic the forms and movements of flowers, refer to the natural world. The mimicry of natural objects is very significant, provoking emotional and neural responses similar to those provoked in encounters with nature. Direct memory evoked by this artwork is the memory of experiencing nature. If the viewer's sensory response then creates a bridge between the viewer and nature itself, the agency of the object seemingly connects contemporary society to nature. In fact, though, the connection is here disrupted. If the response from direct

²³ *Studio Drift*, "Coded Nature."

memory is a serene feeling associated with experiencing nature (as nature is suggested by the use of light and the movement of the objects), the “technological” part of the artwork disrupts this connection. We can analyse the process of a viewer’s experience with “Shylight,” for example, in the following way:



But there is a disruption in this process:



The experience becomes a cycle back and forth between nature and technology.

The force of “Shylight” lies in this cycle, repeatedly connecting to nature and disconnecting from it. In this case, nature and technology connect. They are not presented as oppositions. The neuroaesthetic analysis of Studio Drift’s art shows us exactly this problem. The technological parts of the artwork connote different senses than the artwork as a whole. This leads to a ceaseless process of connecting to and disconnecting from nature. Further, the work provokes viewers to reflect on their everyday lives and recognise that we cannot connect to nature anymore, as our focus on technological advancements and products of culture stands in the way.

As it is presented in the scheme above, Freedberg’s method of analysis is still based on references that can be attributed to cultural influence. As Sally McKey points out, we make connotations not only under the influence of culture but also with

the help of our body's reactions, which are often determined by past experiences and knowledge.²⁴ Although Freedberg's idea to include neural reaction as part of the interpretative process is fruitful for the analysis, the proposed process of simple cause and effect does not really work in object analysis. The *indirect memory* awakened by the *direct memory* has already influenced the latter significantly, before and during the encounter with the artwork. This can be seen in the constant cycle of neural reactions and cultural connotations, as they become intertwined with each other in a perpetual process of interpretation. Eventually it becomes impossible to determine what is cause and what is effect. But the crucial part of the process of interpretation is the point of connection between different connotations and sensory reactions, not only in the associations based on visual analysis.

Studio Drift's hybrid forms, therefore, represent the entanglement of human-made forms and nature. In some of Studio Drift's artworks, like "Dandlelight" (fig. 2) and "Fragile Future" (fig. 3), it is difficult to determine what is technical and what is natural. "Dandlelight," belonging to the series of works in which artists focused on dissecting dandelions, combines natural parts with technological structures. The final form is a structure made of small dandelion lights, constructed to resemble cells, growing on the wired circuit board. Although one can assume that the flowers in the dandelion series are fake, real dandelions were in fact pulled apart and their seeds were assembled again on the LED lights. The Studio Drift's alterations to the dandelion, which was an intervention into the natural object, was a very precise task. In the end, the clear distinction between natural and human-made in "Fragile Future" is difficult to comprehend without knowledge of Studio Drift's creative process. Latour saw the hybridity of modern technology as one of the indications of the fact that the dichotomy between the cultural and the natural is in its essence false.²⁵ Technology, seen as an aspect of the technoscience combination, represents the mind, as it is part of many human-made cultural creations.²⁶ The human ability to use what comes from nature and combine it with technology contributes

²⁴ McKey, *Repositioning Neuroaesthetics*, 32.

²⁵ Latour, *We Have Never Been Modern*, 1-10.

²⁶ Salah and Salah, "Technoscience Art," 151.

to the philosophical view of the human entity as an assemblage of the natural and the cultural, without a hierarchical relation between the two.

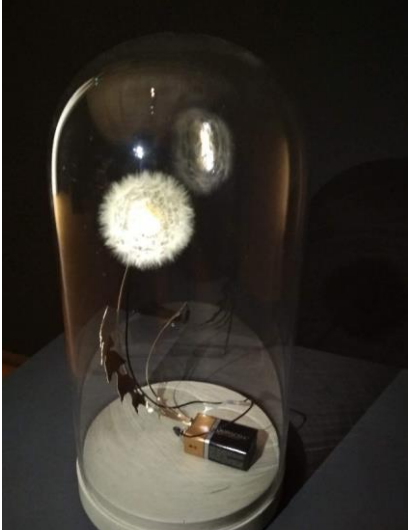


Figure 2: Studio Drift, "Dandlelight," battery, wires, glass, LED lightbulb, real dandelion seeds, 2017. Installation view: Stedelijk Museum Amsterdam, 2018. Photo: Alicja Serafin-Pospiech.

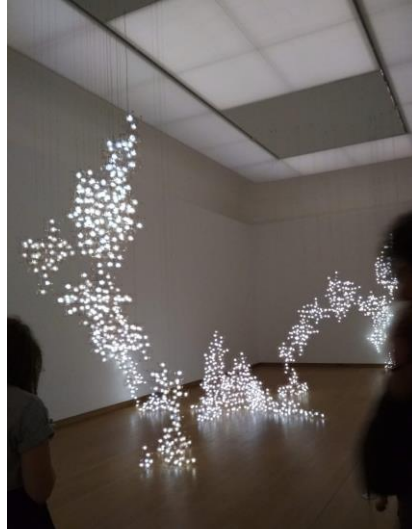


Figure 3: Studio Drift, "Fragile Future," phosphorusbronze, LED's, real Dandelion seeds, 2018. Installation view: Stedelijk Museum Amsterdam, 2018. Photo: Alicja Serafin-Pospiech.

Unconscious and conscious

The "Tree of Tenere" (fig. 4) is another Studio Drift artwork addressing the relationship between nature and humanity. It takes the form of a tree with leaves made out of LED lights, equipped with sensors and connected to a programmed electronic controller. According to the artists, the sensors react to the audience's presence, and software adjusts the colours of the leaves accordingly.²⁷ "Tree of Tenere" was shown both at the Stedelijk Museum (fig. 4) as well as at the Burning Man festival, where viewers actively engaged with it: they climbed the tree and sat on its branches. This shows that there is a relationship between the artwork and the viewer on the material level—the viewer's body becomes part of the creation. If the viewer's body is an actual part of the art, then it is important to think about

²⁷ Studio Drift, "Tree of Tenere."

what the viewer's neural response might be. In "Technoscience Art: A Bridge Between Neuroesthetics and Art History?" Salah and Salah analyse AI-based artworks that tend to connect directly with the viewer without the need for fixed representation: the forms of these artworks change according to the viewer's interventions and, as in the "Tree of Tenere," unconscious reactions.²⁸ Technoscience



Figure 4: Studio Drift, "Tree of Tenere," steel, aluminium, fibers tube, hand-sculpted polyester, paint, plastics, LEDs and embedded electronics. Installation view: Stedelijk Museum Amsterdam, 2018. Photo: Alicja Serafin-Pospiech.

art relies heavily on the connection between the object and the viewer, removing the presence and form of the work almost entirely. In this way, technoscience art abolishes the "necessity of representation."²⁹

Studio Drift's artworks function on two levels: they are representational, and they rely on a connection between the object and the viewer.

That is why visual analysis of these artworks is still important. Considering the viewer and their reaction to the art is a further step

in this analysis. The art of technoscience, according to Salah and Salah is to create a "new interface" made out of neurons.³⁰ That is exactly what "Tree of Tenere" does when viewers' unconscious and conscious reactions interfere with the object. The artistic medium of "Tree of Tenere" are the neurons of the viewer's brain, like paint and brushes in the act of painting.

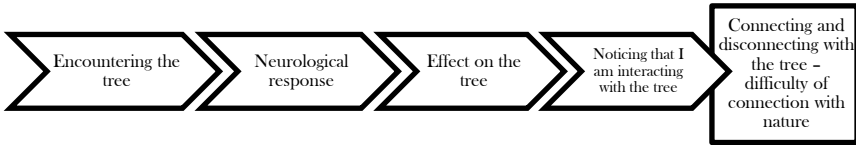
This artwork by Studio Drift treats the problem of combining culture and nature from a different angle. "Tree of Tenere" shows that the relationship between the body and the mind is also a matter of what is regarded as conscious and unconscious action, and how those notions stand in the hierarchy of things in contemporary philosophy. The unconscious neural process is especially awakened when the viewer encounters "Tree of Tenere," and it is the neurological response of the viewer that completes the artwork. In

²⁸ Salah and Salah, "Technoscience Art," 151.

²⁹ *Id.*, 153-54.

³⁰ *Id.*, 151.

this way, the neurological response—the viewer’s indirect and direct memory—creates the artwork itself.



With “Tree of Tenere,” Studio Drift aim to show that humans have a connection with nature on the basic biological level. The viewer’s body connects to the program before any conscious, cultural interpretation is formed in the mind. But in “Tree of Tenere,” this connection needs to be re-established through an algorithm and technology, which belong to the realm of human-made objects. The connection or disruption in this connection becomes the main point of understanding. The need for connection with nature is always present, as the human is not separate from nature. The technology here, thus, can be seen on two levels: as something that disrupts our connection with nature and as a requirement for establishing it in the first place.

As Sally McKey points out, the unconscious, sensual and emotional are often seen as connected to nature.³¹ A reaction that is biological and spontaneous escapes from the control of the human mind, belonging to the realm of ephemeral reactions that quickly move to intellectual interpretation. In “Three of Tenere,” the observer’s unconscious reaction is provoked without their control. The viewer attempts to regain this control, while being confronted with the algorithm-based process behind the changing light. The connotations of one’s life being subjected to forces outside of one’s conscious, rational and intellectual control come to light. The artwork reminds humans that they are, in fact, biological beings connected to the natural world, and in this, not entirely in control of their environment.

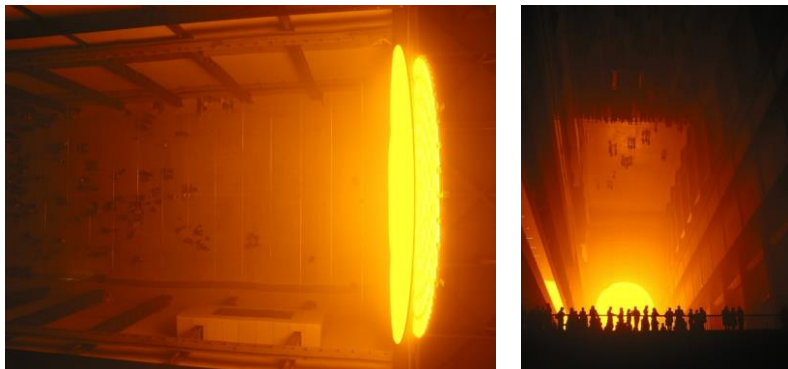
³¹ McKey, *Repositioning Neuroaesthetics*, 53.

Representing nature and human influence

Studio Drift's "Tree of Tenere" is also a commentary on humanity's influence over the natural world. Humanity influences the natural world not only through rational thought—such as by creating technologies that pollute the Earth—but also through sensory reactions originating within our bodies. This means that our presence in the world already makes an impact on it, no matter if we try to control ourselves or not. As viewers learn how they interact with "Tree of Tenere," they try to change their actions and give them a rational direction. The first step to changing humanity's impact on nature is to gain knowledge about this impact. Only then is it possible to redirect human activities towards reducing potential damage to nature, and even to create positive outcomes out of humanity's impact on nature.

While technology becomes a necessity in Studio Drift's works, Olafur Eliasson masks the technical part of his creations. In Eliasson's famous work "The weather project" (figs. 5, 6), which was exhibited at London's Tate Modern Gallery in 2003, he confronts the audience with the sun. Through clever manipulation of space, he manages to transform the gallery space into a sun-filled desert. Fog filling the room scatters light radiating from a large, semi-circular yellow lamp hanging from the ceiling, which is covered in mirrors. These mirrors reflect the audience, which appears to be comprised of small, dark, barely recognisable figures. The light overwhelms the hall, changing its range of ambient colours and creating an effect of high contrast.

Eliasson uses this same strategy in "Din blinde passager" (2010) (Figs. 7, 8, 9), but this second work immerses the viewer completely in the changing colours of fog. The boundaries of space seem to disappear, and the audience is left alone, without guidance from the artist. The immersed viewer sees only the lights and fog, moving through the makeshift corridor without a sense of direction.



Figures 5, 6: Olafur Eliasson, "The weather project," 2003, Monofrequency lights, projection foil, haze machines, mirror foil, aluminium, scaffolding. Installation view: Tate Modern, London, 2003; Courtesy of the artist; neugerriemschneider, Berlin; Tanya Bonakdar Gallery, New York / Los Angeles © Olafur Eliasson.



Figures 7, 8: Olafur Eliasson, "Din blinde passager," 2010, Fluorescent lamps, monofrequency lamps (yellow), fog machine, ventilator, wood, aluminium, steel, fabric, plastic sheet. Installation view: Tate Modern, London; photo: Anders Sune Berg; Courtesy of the artist; Andersen's Contemporary, Copenhagen; neugerriemschneider, Berlin; Tanya Bonakdar Gallery, New York / Los Angeles © Olafur Eliasson.

Both of these creations focus on recreating nature through more than just visuals: the viewer's body itself becomes the vessel of meaning. The audience's reactions and movements become part of the artworks. If we look at the artworks from the perspective of Freedberg's methodology, the scheme below represents the process of the viewer's encounter:



The direct memory is feeling the warmth of the sun on the skin, like the heat of a summer day, recalling the sensation of “heat.” Ephemeral sensations are not the only topic of these creations; as they capture and recreate things as fleeting as weather phenomena, Eliasson's works create a new relationship between the viewer and the art. The immersed audience is not separate from the work. In fact, viewers are not only part of the work in that they interpret it,³² but their bodies, moreover, are part of the real structure of the work. In this, actions of the body are intertwined with processes of the artwork's creation and, at the same time, interpretation.

Eliasson points out that we no longer evolve from the model to reality, but from model to model.³³ This changes the relationship between reality and representation as the old notions shift: representation is no longer the aim. Rather, the aim is the recreation of experience, through which meaning can be conveyed. When representation becomes more fleeting, the viewer's sensations hold the potential for “meaning” or interpretation. The importance of the viewer is embodied directly in “The weather project,” as the members of the audience watch themselves interact with the artwork.

The experience of Eliasson's works takes place somewhere between the artwork and the viewer. The focus in these works, is on interaction and connection, not on the artwork or the viewers

³² Poststructuralist philosophy puts the recipient's mind as the main source of the interpretation of the artwork.

³³ Eliasson, *Models are Real*.

themselves. In this way, recreating natural phenomena can bring the audience back to nature. Once again, this makes humankind one with nature, or in the case of Eliasson's creations, overpowered by nature. As the viewer looks for an exit from "Din blinde passager," a sensation of being lost in the fog becomes the initial basis for interpretation. The sense of powerlessness, of being overwhelmed, creates a separation between nature and humans. The viewer's experience becomes unpleasant and fearful, and a sense of danger is awakened. Reality and representation are not separate, Eliasson has pointed out, just as the viewer's sensations are real and convey connotations coming from indirect memory.³⁴ Eliasson's recreation of nature, therefore, is a way to confront the viewer with nature's power and show that humanity is actually fragile, once it finds itself in a relationship with nature.

Nature is also the subject of Lee Boroson's artwork "Lucky Storm" (fig. 9). Like Eliasson, Boroson aims to recreate ephemeral experiences by creating gallery installations mimicking nature. In his



Figure 9: Lee Boroson, "Lucky storm," Dimensions vary, Nylon, monofilament, stainless steel, hardware, blower, 2004, <http://www.leeboroson.com/art/recent-projects/outer-limit>.

large-scale inflated sculptures, Boroson recreates different natural environments, providing the opportunity for the audience to enjoy the visuals of these environments. But like with Studio Drift's artworks, the mimetics are disrupted by the material and the technique. The materiality of Boroson's artworks contributes to their interpretation: while plastic represents destructive human influence on the natural world, the inflated objects are fragile like balloons, suggesting that humans could lose the miracles of nature at any moment. The process of interpretation here is similar to that explored in the analysis of Studio Drift's work, highlighting the fragility of our connection with nature, which is continuously lost and re-established during the encounter with the artworks.

³⁴ *Ibid.*

It should be noted that Latour's critique also acknowledges that although the complete separation of the biological and the cultural is a social construct rooted in modernity, a distinction between the two is necessary to identify the human ability to influence the environment.³⁵ If we do not distinguish ourselves from the natural world, we lose the tools to critique the actions we direct consciously and unconsciously towards the environment. If we look at the products of culture, following Couchot, as de facto objects of nature, every human action can be recognised as being a product of the natural world. In this way, technologies that destroy land and pollute water can be seen as extensions of the "natural." Studio Drift's hybrid forms represent this line of philosophical thought. In these forms, technology and nature merge with each other seamlessly, giving birth to new kinds of entities. As the artworks' enchanting beauty captures viewers in awe, the audience can forget about the dystopian reasoning behind the creations. What we actually look at when we encounter Studio Drift's art is the failure of humanity to change. Humanity's impact on the Earth is so far-reaching that human activity and human creations are inseparable from the natural world.

Communal experience

Explained through neuroaesthetic methods, the process of reception can be viewed as an individual experience. A sensory experience is the impression of one particular individual, making it seem inherently subjective. The artworks discussed above, also combine the knowledge of the viewers' reactions with the use of big spaces, occupying entire galleries. The viewer, then, is not separated from others in the audience. Just as these works blur the boundaries between object and viewer, they also create connections between individuals immersed in the gallery space. This is especially apparent in Eliasson's creations (fig. 10), in Studio Drift's "ShyLight" (fig.1), and in Boroson's inflated caves and clouds (fig. 9), where we can experience the art as a collective body, united with the other viewers. The actions of one viewer heavily influence those of the others. When, as Eliasson puts it, "sensations become actions,"³⁶

³⁵ Pollini, "Bruno Latour," 25-28.

³⁶ Cabañero and Mulet, "Spaces of Participation and Memory," 25-29.

one's sense of individuality becomes increasingly vague. The audience together experiences the space that the artist provides for them. The experience becomes communal. Photographs depicting the audiences of these works show that the gallery spaces are often occupied not by isolated individuals but by the audience as a group of people mimicking each other's movements and actions. The feeling of connection to the art is shared, and the audience forms a collective subject.³⁷ The transformation into this collective subject takes place in the gallery space.



Figure 10: Olafur Eliasson, “The weather project,” 2003, Monofrequency lights, projection foil, haze machines, mirror foil, aluminium, scaffolding. Installation view: Tate Modern, London, 2003; Courtesy of the artist; neugerriemschneider, Berlin; Tanya Bonakdar Gallery, New York / Los Angeles © Olafur Eliasson.

According to the findings of neuroscience, mimicking others is not necessary to create a connection between individuals. John Onians associates mimetic theory with the specific neurons in the body called mirror neurons. As Semeler points out, the

³⁷ This process takes place while the viewers encounter the objects at the museum, or the gallery. *Id.*, 26.

neurons present in the premotor cortex demonstrate how we learn. Through imitative processes, even if we do not understand the meaning of the actions we carry out, or without performing any movement. When we observe someone performing any task, we activate in ourselves the same area of the cerebral cortex.³⁸

From this perspective, seeing other members of the audience move around already creates an association in the individual's mind. Mimicking and simulating others' movements is not necessary to interpret the artworks in the same way as the other viewers. These insights provide a new way to look at neuroaesthetic experience: while processes of reception happen individually, the members of an audience influence each other.

This leads us to Freedberg's concept of memory as included in the process of reception. If experiencing art is a collective experience, the process of interchanging influence amongst viewers draws upon cultural memory while at the same time creating a new common cultural experience within the plural subject of the audience. McKey has called this kind of aesthetic experience taking place in the gallery a "performative assemblage," through which collective knowledge of all the actors is involved—both human and non-human (objects, viewers, gallery space)—emerges.³⁹ This approach shifts from examining a particular individual subject to examining the plural one consisting of different kinds of entities. This creates a model based on a network of connections between the viewer, the object, other members of the audience, and those members' social background and culturally influenced neural reactions.

Conclusion

The art objects analysed in this article represent a paradigm shift in contemporary views of nature and the natural. Since these objects merge what is natural and what is human-made, the distinction between natural phenomena and products of culture becomes diffuse. The artists not only mimic the aspects of nature observable

³⁸ Semeler, "Neuroaesthetics: Aesthetic," 297.

³⁹ McKey, *Repositioning Neuroaesthetics*, 78.

by the senses, but also try to enhance the human ability to comprehend nature by creating spaces that allow the viewer to experience different phenomena. Their artworks allow the audience to once again feel a connection with nature, even though these works are human-made objects. Neuroaesthetics explains the processes of this connection, bridging the cultural and biological and showing that the body's reactions to art bear some similarity to real experience. A viewer's connection with an artwork recreating nature becomes, to a degree, a connection with "real" nature itself. This is especially clear from the analysis of Studio Drift and Eliasson's immersive art, which identified mimetic strategy as recreating sensations, movements and emotions in the viewer. The artworks become only the first prompt to induce the feeling of being one with nature. Their form is important only within the function for the purpose of capturing the viewer's attention. The neuroaesthetic method conceptualises and captures the physicality of the connection between the viewer's body and the art object.

This poses questions about the relationship between humanity and nature. The artworks analysed in this article guide the viewer, positioned as a representative of humanity, to the sensation of something lost. Studio Drift points to the damage that we caused to the natural world in the modern era. Nature and its objects, for Studio Drift, are not things that we can mimic without a visible combination with technology. Nature, according to this view, is lost and unsalvageable, and we can only hold onto the memory of the natural world. Eliasson's creations shift the position of humanity, posing different notions. The human, in Eliasson's work, is small and lost, overpowered by natural phenomena. In both Studio Drift and Eliasson's approaches, we are included in nature and we are not seen as separate from each other. Products of culture are therefore inseparable from nature, and, as such, our analysis of them should not dispense with the findings of neuroscience and biology. These findings can lead art historical and visual culture researchers to more comprehensive interpretations.

Bibliography

- Cabañero, Jesus Segura and Toni Simo Mulet. "Spaces of Participation and Memory in the Work of Olafur Eliasson and Janet Cardiff." *International Journal of Arts* 8, no. 2 (2018): 25-29, doi:10.5923/j.arts.20180802.01.
- Eliasson, Olafur. "Models are real." In *Models*. Edited by Emily Abruzzo, Eric Ellingsen and Jonathan D. Solomon, 18-25. New York: Princeton Architectural Press, 2007.
- Freedberg David. "Memory in Art: History and Neuroscience of Response." In *The Memory Process, Neuroscientific and Humanistic Perspectives*, edited by Susanne Nalbantian, Paul M. Matthews and James L. McClelland, 337-358. Cambridge: MIT Press, 2011.
- Kędziora, Łukasz. "Sensualność i Badania Empiryczne w Kontekście Strategii Budowania Ekspozycji." In *Sensualność Ekspozycji Muzealnej*, edited by Halina Gołufńska, Łukasz Kędziora and Adam Tołysz, 123-134. Toruń: Wydawnictwo Naukowe UMK, 2016.
- . *Wizualność Dzieła Sztuki. Ocena Potencjału Neuroestetyki w Badaniach Historyczno-Artystycznych*. Toruń: Wydawnictwo Naukowe UMK, 2016.
- . "Niezauważona i Rewolucyjna Neurohistoria Sztuki." *Acta Universitatis Nicolai Copernici, Zabytkoznawstwo i Konserwatorstwo* 45 (2014): 223-252. http://dx.doi.org/10.12775/AUNC_ZiK.2014.009.
- Kędziora, Łukasz and John Onians. "Basic Bibliography on Art history and Neuroscience." Accessed November 7, 2021, <https://www.lukaszkedziora.com/basic-bibliography-on-art-history-and-neuroscience/>.
- Latour, Bruno. *We Have Never Been Modern*. Translated by Catherine Porter. Cambridge: Harvard University Press, 1993.
- . *Politics of Nature*. Translated by Catherine Porter. Cambridge: Harvard University Press, 2003.
- Ivanova, Cvetana. *Neuroaesthetics of Emotion and Contemporary Art Form*. PhD diss., Sofia University, 2017.
- McKey, Sally. *Repositioning Neuroaesthetics Through Contemporary Art*. PhD diss., York University in Toronto, 2014.
- Onians John. "Art, the Visual Imagination and Neuroscience: the Chauvet Cave, Mona Lisa's smile and Michelangelo's terribilita." *Cortex* 105 (August 2018): 182-188.
- . *Neuroarthistory: From Aristotle and Pliny to Baxandall and Zeki*. New Haven: Yale University Press, 2007.
- Pelowski, Matthew, Helmut Leder, Vanessa Mitschke, Eva Specker, Gernot Gerger, Pablo P.L. Tinio, Elena Vaporova, Till Bieg and Agnes Husslein-Arco. "Capturing Aesthetic Experiences With Installation Art: An Empirical Assessment of Emotion, Evaluations, and Mobile Eye Tracking in Olafur Eliasson's 'Baroque, Baroque!'" *Frontiers in Psychology* 9 (August 2018). <https://doi.org/10.3389/fpsyg.2018.01255>.
- Pierce, Marcus, Dahlia Zeidel, Oshin Vartanian, Martin Skov, Helmut Leder, Anjan Chatterjee, Marcos Nadal. "Neuroaesthetics: The Cognitive

- Neuroscience of Aesthetic Experience.” *Perspective of Psychological Science* 11 (March 2011): 265-79. doi: 10.1177/1745691615621274.
- Pollini, Jacques. “Bruno Latour and the Ontological Dissolution of Nature in the Social Sciences: A Critical Review.” *Environmental Values* 22, no. 1 (February 2013): 25-42.
- Roode, Ingeborg de, Lien Djie Pao. “Studio Drift: Making the Impossible Possible.” Stedelijk, accessed November 7, 2021, <https://www.stedelijk.nl/en/digdeeper/studio-drift>.
- Salah, Alkim Almila Akdag and Albert Ali Salah. “Technoscience Art: A Bridge Between Neuroesthetics and Art History?” *Review of General Psychology* 12, no. 2 (2008): 147-158.
- Santayana George, “Premonition.” In *A Hermit of Carmel and Other Poems*, 85-86. New York: Charles Scriber’s Sons, 1901.
- Semeler, Alberto Marinho Ribas. “Neuroaesthetics: Aesthetic in a Naturalistic Perspective of Art Philosophy.” *Athens Journal of Humanities & Arts* 4, no. 4 (October 2017): 283-300.
- Studio Drift, “Tree of Tenere,” accessed February 20, 2022, <https://studiodrift.com/work/tree-of-tenere/>.
- , “Coded Nature,” accessed February 22, 2022, <https://www.e-flux.com/announcements/192084/studio-driftcoded-nature/>.
- Zeki, Semir, and M. Lamb, “The Neurology of Kinetic Art,” *Brain: A Journal of Neurology* 117, no. 3 (July 1994): 607-36.