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Jacobus Bracker,  
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# VISUAL PAST

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# Critical Zone



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## Notes from an Expedition through the *Critical Zone*

Jacobus Bracker, Stefanie Johns

When our expedition entered the *Critical Zone* a fierce fight, led by conflicting geo- and biopolitical interests, over the existence and dimension of a human-made climate crisis was already taking place in societies all over the world.<sup>1</sup> Already back then, Earth's processes were – through events like droughts, floodings, famines, melting glaciers, and the extinction of species – striking humans so directly that it became nearly impossible to clutch at the distancing dichotomy of nature and culture.

In the four years since we entered the *Critical Zone* those events have become more frequent and the processes more intense. Nevertheless, as if unimpressed, large parts of humanity show no signs of transforming culture and practice towards sustainability and drive their kin headlong into catastrophe. A global pandemic with a virus making use of humans' lifestyles turned their daily routines upside down and cost millions of lives. Summers have become hotter, and our instruments show a rise in the concentration of CO<sub>2</sub> in Earth's atmosphere by 6 ppm. Based on the measurable and visible extent of human impact on Earth, geosciences already suggested the 'Anthropocene' as a new geological era. However, its cultural dimension – its interweaving of its complex range of meanings and consequences into ecocultural human minds – is blurry and takes on diverse forms through different societies.

1 Cf. our first report: Johns – Bracker, Visual Past 2019, 1–8.

Instead of pursuing dichotomous world views or despairingly taking the escape route of climate change denial into an imagined parallel world, Bruno Latour (2018) proposed to set out for the *Critical Zone*: this thin near-surface layer of Earth between the bottom of the groundwater and the tops of the trees, where, rock, soil, water, air, and living organisms constantly interact and constitute through highly complex transformational processes the conditions for all terrestrial life. Today, it is more essential than ever to explore this *new* territory to understand the inseparable interweaving of humans and terrestrial processes: Be part of it!

In the growing abundance of scientific and artistic research in the context of the climate crisis, inter- and transdisciplinary approaches emerged as twists and turns of existing narratives and the ‘image’ of the Earth that we have culturally imagined. Each expedition through the *Critical Zone* transforms several snapshots: the climate crisis includes a loss of biodiversity, an increasing CO<sub>2</sub> concentration or the triggering of another tipping point making the 1.5-degree target more and more utopian. Scientific and artistic operations in the *Critical Zone* take place under their constant change – sometimes resulting in irreversible destruction.

Recognizing existing and newly emerging images and transforming them in necessary ways, is one of the goals of changing climate awareness. It seems to be important to understand that the visual (re)presentations of Earth are something like formed views. They play a decisive role in the relationship and resonance between humans and Earth inside the *Critical Zone*.

Such an exploration raises questions of visibility and displaying. Therefore, the transdisciplinary conference *Critical Zone* (2019)<sup>2</sup> has undertaken an image theoretical expedition to collect evidence. The development and contour of a vocabulary about terrestrial processes requires different scientific and artistic research approaches to initiate

2 The conference took place within the framework of the series of conferences on image science issues.

dialogues. Our mission focuses to think these dialogues also as visual dialogues<sup>3</sup> and image dialogues<sup>4</sup>.

Finding visions of other futures challenges us. Donna Haraway remarks in her scientific-philosophical position, that vision “is always a question of the power to see – and perhaps of the violence implicit in our visualizing practices.”<sup>5</sup> To follow Haraway’s thinking of “situated knowledge”, all images of the climate crisis are images made by someone. This makes it clear that the selection and production of images as well as their distribution is also linked to privileges.

The role and power of imagination<sup>6</sup> “as a way of understanding and exploring the manifestations of climate change in culture and society”<sup>7</sup>, could concern

the ability to generate [...] images of states of the world, [...] that are no longer or not yet real (historical and future thinking, including prediction and scenario thinking), fictional worlds, but also dimensions of the world that are real but simply not open to sensual experience (e.g., abstract ideas such as democracy, socio-ecological system or identity; real but inaccessible places like the deep ocean).<sup>8</sup>

In order to develop ways out of the ecological crisis, responsible action is required on the part of individuals in the collective. We should work on “a collective imagination capacity”<sup>9</sup> to empower other images of the *Critical Zone*.

Such an Earthly imagination capacity is also part of human eco-cultural webs of meaning. In this respect, images can be considered as media of communication with the capacity to transform such webs towards an awareness of being an insoluble part of the *Critical Zone*, firmly connected with its fate, towards a sustainable lifestyle responsibly taking care of future generations.

3 Knorr-Cetina 1999, 248.

4 Johns 2021, 379.

5 Haraway 1988, 585.

6 “Imagination here is understood as a way of seeing, sensing, thinking, and dreaming the formation of knowledge, which creates the conditions for material interventions in and political sensibilities of the world.” Yusoff & Gabrys 2011, 1.

7 Ibid.

8 Milkoreit 2017, 4.

9 Ibid., 1.

On 22 October 2018 the European Parliament debated the reduction of the impact of certain plastic products on the environment. During that session something remarkable happened, indeed striking from the standpoint of the image-theoretical observer. It began with rapporteur Frédérique Ries stating that the oceans have become humans' ultimate waste dump and are dying from all that rubbish. The media were endlessly repeating images of cormorants suffocating from plastic bags, sea turtles with stomachs full of plastic, just unbearable images: "Ces images sont insupportables."<sup>10</sup> Then the Irish member of parliament, Lynn Boylan, stated: "Mr President, we've all been horrified by the images of plastics in our ocean and we're becoming more aware of the consequences of our throw-away economy. We are now in a position as legislators to put in place aggressively ambitious rules to stop this plastics crisis [...]"<sup>11</sup> Last but not least Spanish member Pilar Ayuso conceded that the abuse of plastic resulted in dumping waste in the oceans producing images that we all had seen.<sup>12</sup> It followed that the European Parliament approved the Commission's proposal to ban certain plastic products and the further negotiations with the Council resulted in the directive on the reduction of the impact of certain plastic products on the environment.<sup>13</sup> This occurrence is quite remarkable because images obviously unfolded an agency in the legislative process through the three parliamentarians who, consciously or not, explicitly referred to these images.

The example shows humans as a life form acting in the *Critical Zone*. Here, we observed them in their famous capacity as weavers of culture made up of knots of meaning through communication processes co-acting with images directly influencing the outcome of a legislative process.

10 European Parliament, [https://www.europarl.europa.eu/doceo/document/CRE-8-2018-10-22\\_EN.html?redirect](https://www.europarl.europa.eu/doceo/document/CRE-8-2018-10-22_EN.html?redirect) (03.07.2020).

11 Ibid.

12 Ibid.

13 Directive (EU) 2019/904 of the European Parliament and of the Council of 5 June 2019.

And shortly before publishing this publication the Hamburg Climate Futures Outlook 2023 declares:

Meeting the 1.5°C Paris Agreement temperature goal is not plausible, but limiting the global temperature rise to well below 2°C can become plausible if ambition, implementation, and knowledge gaps are closed.<sup>14</sup>

“Rest in peace” is one reaction in the press, which responded to the study situation with an obituary.<sup>15</sup> This image once again underpinned the irretrievable destruction of the climate crisis. In order to counteract this desolate situation, we hope to make a difference by acting consciously and through the scientific analysis of the climate crisis. The following range of questions arises in this field and occupies our minds:

**What are the living conditions  
for images in the Critical  
Zone?**

**Can images be understood as mediators between earth and humans or as agents within the Critical Zone?**

**Which image strategies arise to stage the new political actant ‘earth’?**

**Do there exist other animalia symbolica (Cassirer) next to humans in the Critical Zone?**

**How are conditions of visibility in the Critical Zone configured for its figurative symptoms?**

**How do images form/educate within the Critical Zone? How do they (de-)construct world views?**

**How are images involved in the transformation of knowledge on climate crisis?**

**How does artistic practice articulate these questions, i.a. as critical pointing gestures and transforming creators?**

14 Engels et. al 2023.

15 Erdmann 2023.



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# **Must We Meet Monsters at the End of the World? Reflections through *Leviathan* (2012) and *Behemoth* (2015) on the critical zone of extraction**

Sudipto Basu

## **I. Introduction**

The new visual analytic that Alexandra Arènes, Bruno Latour, Jérôme Gaillardet have given to the Critical Zone gives me cause to think of the crucial problem of relationality in the Anthropocene.<sup>1</sup> Rejecting the disembodied planetary view so prevalent in imagining ecological change, Latour et al. propose an anamorphic rescaling that localizes planetary biogeochemical flows to the porous “thin pellicle” on Earth’s surface in which life “has modified the cycles of matter by activating or catalyzing physical and chemical reactions.”<sup>2</sup> They further localize by choosing critical zone observatories (CZO) as nodes for sensing and responding to ecological change. The CZO is a site on the brink of qualitative change (therefore critical), “as small as a garden or as large as the Amazon basin,” where instruments yield reliable readings of biogeochemical flows through air, soil and water. This data can then be correlated with various human and nonhuman activities or agencies (agriculture, industrial effluents, policies, etc.)

1 Arènes – Latour – Gaillardet 2018. I’m using the widely used term Anthropocene in lieu of the other alternatives proposed only for reasons of convenience. One could take Bonneuil and Fressoz’s example and multiply the names of the kainos in a cubist fashion to cast several genealogies of the ecological contemporary. Bonneuil – Fressoz 2016.

2 Ibid, 2.

to map, responsibly steer and sustain the multispecies commons. Instead of a unified Human agent acting on Nature, the complex of Earthly life is resolved into a mottled network of agents (in the fashion of Latour's Actor-Network Theory), allowing *concrete* points of reparative intervention that "the [abstract, nebulous] face-to-face of Human and Nature does not allow."<sup>3</sup> Since scale is a mediation of parts and wholes, bodies and environments, Latour et al. sharply concretize the scalar constructs by which we make sense of the metabolic processes constituting life in a given world. They offer a method of cognitive mapping for political ecology that is unrelated to Jameson's Marxist analytic. Notably they draw upon cinematic idioms of montage, superposition and animation to enact an anamorphosis; thereby underlining how central aesthetics is to political ecology today. While agreeing with their project of re-imagining relational constructs like scale, and the mobilization of aesthetics, I shall attempt to question some of its assumptions about sensing ecological change, focusing on the extractive resource frontier as a critical zone. Staying with the cinematic, I take two experimental documentaries, *Leviathan* (2012, Lucien Castaing-Taylor and Verena Paravel) and *Behemoth* (2015, Zhao Liang), as objects of analysis. These films vividly depict the strange lifeworlds in respectively a deep-sea fishing trawler off New Bedford (a historic whaling port also referenced in *Moby Dick*) and the gigantic open-pit mines of Inner Mongolia, PRC. As evident in the title, I use the trope of monstrosity adopted by these films to advance my critique.

To problematize Anthropocene relationality, I choose critical zones of extraction because humans have become a geological force "not only because we *emit* but first and foremost because we *extract*."<sup>4</sup> Extraction strains the question of relationality by mangling spatial constructs like the local and global. Any attempt to relocalize the feedbacks of extraction to a CZO à la Arènes, Latour and Gaillardet thereby runs into the problem of non-scalability. As Gavin Bridge

3 Latour 2014, 4.

4 Usher 2019, 1.

shows, the mining hole introduces strange kinks in our normative spatio-temporal coordinates. Located in spots of high concentration, the hole digs into the pre-history of Man to extract “reserves of energy formed unimaginably slowly.”<sup>5</sup> Once extracted, this ancient stored-up energy flows into a global network of circulation, where it is spent in months: a vast compression of time and dispersal in space. Throughout the cycle of extraction, circulation and consumption, toxic effluents bleed nonlocally into air, water, soil and bodies. Delimiting extractive activity to a CZO such as the frontier and its immediate surrounds necessarily excludes the nonlocal forces which shape it as pre-condition (e. g. the ecological substrate formed across millenia, global finance) as well as its spatiotemporally distant after-effects. Because our lives are entangled in the metabolic complex of extraction, Timothy Clark argues that even the simplest acts of living in the Anthropocene enact a “derangement of scales.”<sup>6</sup> There is a pervasive crisis of agency and uncertainty about our place in the world. We know neither the appropriate scale of intervention in combating climate change, nor the compounding scale effects of the simplest everyday acts until too late. The Anthropocene is a *hyperobject*: a “nonlocal thing massively distributed in time and space relative to humans,” “occupying a higher dimensional phase,” which “sticks” to other objects and is palpable even while evading total comprehension.<sup>7</sup> It produces a cognitive estrangement regarding our being in the world.

The problem might be in the conception of scale informing our scientific epistemes and cognitive habits. Scale after all originated in a human measure (in units like foot or cubit) which relativized the world against our bodies. While anthropometric units were eventually superseded, a certain anthropocentrism has persisted in technoscientific and everyday practice as convention. For example, digital models in architecture that are freely scalable and infinitely manipu-

5 Bridge 2015.

6 Clark 2012.

7 Morton 2013.

lable – what Anna Tsing calls precision-nested scalability – still continue to anchor their space with the proxy ‘average man’ inside, even as this architecture increasingly eludes our cognitive experience.<sup>8</sup> While we live in a world of extremely sophisticated techniques of computation and the quantified governance of life (in theory, it is possible to predict and map nearly everything given enough data and processing power), our own too-human grasp on the totality of forces determining our concrete situation in the world – which Fredric Jameson calls cognitive mapping – is more precarious than ever because of, not despite, these blackboxing techniques of computation.<sup>9</sup> In the everyday, this peculiar anthropocentrism of scalar practice causes some of the more absurd symptoms of scalar derangement Clark speaks of, such as when we try to regain some ecological agency in ritual acts like saving toilet paper or turning the tap off while brushing. The resource frontier shows us the helpless hubris of such acts. *Leviathan* and *Behemoth* interest me first because they choose the trope of monstrosity to index this scalar mangle at the heart of the Anthropocene. In the Book of Job, *Leviathan* and *Behemoth* are primeval creatures ruling over sea and land. Both vastly exceed not just humans but all earthly creatures in size and power; in some eschatologies, their fight brings about the apocalyptic end of the world. In choosing such potent biblical imagery of more-than-human power, the filmmakers posit the strange scalar effects that extraction has in our grasp of space-time. If there is a monster they allude to but cannot show directly, it is Capital which acts as the infernal invisible hand sculpting the surface of the Earth and dredging up the seas. However, a ready name such as Capital explains neither the semantic richness nor the radical otherness evoked by the monstrous. I shall try here to unpack these meanings.

The monstrous of course has pride of place in environmental humanities today. Thought to have been vanquished by modern scien-

8 Tsing 2012.

9 Jameson 1988.

tific reason, monsters have returned with vengeance in the Anthropocene. Since nature can no longer be imagined as a passive backdrop to human history, distinct from culture, monsters are constructs to grasp the tangled relations between human and nonhuman nature-cultures subtending our multispecies existence on Earth. Donna Haraway therefore names this epoch Chthulucene, arguing that Anthropocene fails to signify a *kainos* when we are at last overcoming the anthropocentrism of modernity.<sup>10</sup> The monstrous is a subversive master-trope of relationality signifying the ‘unnatural’ coupling of bodies and environments in our ecological condition. Such estranging relationality is however re-discovered when ancient ties sustaining multispecies ecologies are faced with catastrophic collapse. Monsters then have a double valence in political ecology: they alert us to “ancient chimeric entanglements” between human and nonhuman realms, and reveal in turn Man’s monstrosities.<sup>11</sup> Along these lines, Latour exhorts us to “love our monsters.”<sup>12</sup> Through a corrective reading of *Frankenstein*, he proposes that modernity has misrecognized progress as Reason’s emancipation from Nature, whereas in practice it has thickened human and nonhuman co-dependencies, spawned weird conjoined temporalities! The error environmentalists make is to curse technology as the monster which perverts Nature; when the sin is misrecognizing and abandoning these deepened entanglements that technology engenders. For Latour, ‘loving our monsters’ means overcoming this modernist misrecognition: we must fully embrace these thick entanglements, make kin with non-human others, factoring in the unintended consequences of modernization.

Extraction shows the faultlines in reading monstrosity as a politics of relationality, for it tears apart such entanglements. As Philip J. Usher argues, extraction involves “action[s] in a direction that leads away from the ground/planet;” separation of “inanimate (but per-

10 Haraway 2016.

11 Swanson et al. 2017, M2.

12 Latour 2011.

haps vibrant) objects” and animate beings from their embedded ecologies of the living ground.<sup>13</sup> This dynamic of separation, I insist, persists in the social division of labor in extraction as well. As McKenzie Wark notes in her critique of Latour, what is missing in his account is the “the *situated* thought of the labor point of view.”<sup>14</sup> In asking us to recognize our intimacies with nonhuman natures, Latour continues to speak uncritically for a collective species-being, “we” (though he possibly has scientists and experts most concretely in mind). Yet the problem is that, despite our entanglement as a species within the human/nonhuman complex, we do not share equally in the labor-of-becoming-intimate. Only a part of society has to deal with the materiality and risk involved in extracting matter and energy crucial to species metabolism. The capitalist division of labor produces a comprehensive gradation of bodies – determined by vectors of race, gender, ethnicity, class etc. – consigned to perform various kinds and intensities of labor on specific grades of matter, in particular conditions of precarity. Matter is graded: each grade exudes values of desirability, prescribing how proximate or distant we want to be from it, how much of it we are willing to handle. Gold is the stuff of our fantasies, yet few of us would make the perilous descent into a gold mine to carve out the ore. Capital realizes this play of materiality with desire and labor, and mobilizes an apparatus of (im)mediation which lets a part of humanity reap the benefits of extraction without directly shouldering its risks and responsibilities. If, per Latour, modernity has misrecognized the actually deepening relations between humans and nonhumans as freedom from bondage, one must add that it is a structural flaw in capitalist modernity; not an aberrant oversight.

Latour and others who use monstrosity as a trope of ecological relationality forget that monsters index precisely this dynamic of separation and rupture. As Jeff Cohen argues in *Monster Culture*, monsters are cultural constructs to encode the *radical heterogeneous* difference at the heart of society into alien forms and expel it. The monster

13 Usher 2019, 4.

14 Wark 2017.

seems to come from outside, even though it originates within. If monsters are so often racialized or gendered beings, Cohen says, it is because the internal contradictions of human existence cannot be managed without being banished into alien forms. I argue that, by mobilizing tropes of monstrosity, *Leviathan* and *Behemoth* point to this very dynamic of violent separation enacted by extraction. I connect this reading of monstrosity with Georges Bataille's formula of the accursed share, arguing that the monstrous is an image of the formless matter and energy which subtends life on Earth while getting remaindered during extraction. For Bataille, this formlessness is however radically heterogeneous, irreducible to human ends and uses. As capitalism abducts the species metabolism for Man, this heterogeneity immanent to life is disavowed and a far-reaching civilizational violence formalized.

Therefore, read through the films, my argument shall be two-fold. One, that monstrosity at the extractive frontier points to a problem of scale in the Anthropocene, arising from the denial of a constitutive radical heterogeneity (an extreme otherness) in our scalar constructs. To foreground this otherness of extraction, the films adopt an aesthetic of estrangement, disrupting our habitual, verticalized modes of rationally apprehending space. Two, I argue that monstrosity attests to the separation of form from formlessness in the process of extraction – which banishes the formless into a shadow existence and violently segregates matter and social labor. Through Bataille, I suggest that this logic of separation stems in the last instance from a primal fear of death and decay which demonstrates the constitutive otherness of life. I end the paper analyzing the monsters in the political philosophy of Thomas Hobbes, especially the famous frontispiece image of *Leviathan*. Though the films do not refer to him, Hobbes haunts political ecology today, as Geoff Mann and Joel Wainwright show in 'Climate Leviathan.'<sup>15</sup> Pertinently, I demonstrate that Hobbes dealt with the very problem of the formless analyzed by Bataille. Hobbes's political theory, which sanctions the modern drive

15 Mann – Wainwright 2013.



toward accumulation (and thereby casts a long shadow on the Anthropocene) is founded on a primal fear of decay. Against Hobbes's catastrophism, I propose that Bataille and the films *Leviathan* and *Behemoth* propose an ecological ethic that allows us to live in Anthropocenic turbulence by reconciling with the otherness subtending our finite human existence.

## II: *Leviathan*, *Behemoth* and the implosion of the scalar image

Let me get to the two films which, we shall see, pose a common problem in some ways. In *Leviathan* (2012), Harvard Sensory Ethnography Lab filmmakers Lucien Castaing-Taylor and Verena Paravel follow a trawler off New Bedford in its deep-sea fishing expeditions. Rather than give any context or commentary, *Leviathan* begins *in medias res*, immersing us in the ocean's sensory commotion throughout its run. As if tethered precariously to the rocking boat with the filmmakers and fishermen, we witness the crew go almost mechanically through their daily chores: hauling and gutting fishes as night turns to day, and back again. The boat is repeatedly swarmed by colonies of seagulls. Shot with GoPros attached to or intimately following various human and nonhuman bodies at work or in motion, *Leviathan* is free of master-shots which might allow us to compose wholes from the sensory shards generated by the camera-eye's placement in the middle of things [Fig. 1]. At times the GoPros unhinge even from the provisional grounding of the trawler, dipping in and out of the water, making the interface of sea and air into an abstract picture plane.<sup>16</sup> The sound design likewise favours extreme proximity and the noisy outside over the middle-scales that ground cognition, throwing us into oceanic turbulence. The titular sea-monster exists at the edges of the frame without being seen; it "makes the sea boil," threatens to sweep us off our feet any moment. Having no voiceover or dialogue, no language to mediate, *Leviathan* is the culmination of a visual turn in anthropology that, after years of distrusting images, builds ethnographic knowledge upon a sensory empiricism:

16 Pinney 2015, 36.

reaffirming the phenomenological link between the body and the world as the live ground of experience.<sup>17</sup> In a 1996 essay, Castaing-Taylor argued that cinema's pre-linguistic, existential relation with the real allows it to present sensuous, corporeal experience with a quality of this-ness unmatched by most ethnographic writing.<sup>18</sup> For sensory ethnography, discourse can no longer solely arbitrate truth. *Leviathan* pushes this desire for pre-linguistic immersivity in a turbulent lifeworld to the limits, eschewing any grounding for a "violent cubist disassembling of any stable point of view through [...] distributed observation."<sup>19</sup>



Fig. 1: The "violent cubist disassembling" of perspectives of *Leviathan*

The second film, Zhao Liang's *Behemoth* (Bei xi mo shou, 2015) paints an abstract portrait of the terrifying impact of open-pit mining and iron-making in Inner Mongolia, mixing the idioms of landscape cinema with performance art. *Behemoth* comes in a notable lineage of Chinese films (many from the country's independent documentary scene) on the hidden social and environmental costs of PRC's acceleration into global superpower status through investments in infrastructure, manufacturing and finance. While a documentary, the film

17 Two signature texts of this sensory turn are MacDougall 2005 and Pink 2006.

18 Taylor 1996.

19 Pinney 2015, 35.

is structured along two allegories narrated in lyrical voiceover. There is, first, the biblical monster whose insatiable hunger has to be fed by denuding several mountains. Second, Zhao borrows from *Divine Comedy* the allegory of Dante's journey, and remakes it into a travel along the industrial supply chain of coal and iron ore mining (Inferno) and steel manufacturing plants (Purgatory), which feed into the ghost cities of Ordos (Paradise) made purely to sustain speculative finance. While *Leviathan* offers an extreme deterritorialized perception, Zhao seemingly adopts a glacial aesthetic that favors long panoramic shots to register the scale of ecological destruction. He draws stark contrasts between the industrial ruinscape and the receding pastures on the margins in which nomadic shepherds still graze [Fig. 2].



Fig. 2: Panoramic shots that register the sheer scale of ecological destruction in *Behemoth*.

While inviting a contemplative gaze typical of landscape cinema, *Behemoth* rends apart this trance periodically with dynamite explosions that turn the air thick with a fine mix of grey, brown, and black dust, and erase the boundary between land and sky. Even without explosions, the Earth in the mines is alive, emitting plumes of dusty smoke from coal seam fires. Soon we descend into the maelstrom of the open pit where hundreds of earthmovers and drills carve out ore day and night. In the mammoth hole, the terrestrial surface is all serrated

inclines, constantly changing gradations; immersed in which horizontal and vertical axes cannot be separated [Fig. 3]. The body loses orientation in this geotraumatic turbulence. The infernal noise of the machines and the pervasive dust disperse and deform the perceiving body. Dust elicits a cine-meteorological gaze, distributing sense across the milieu: we attend to micro-movements in the air, the smallest shivers on land.<sup>20</sup>



Fig. 3: Geotraumatic turbulence inside the open-pit mine, in *Behemoth*. The sense of a horizon has collapsed as the land is shaped into a series of colliding inclines.

Though *Leviathan* and *Behemoth* represent the resource frontier in different ways, they internalize the violent trauma of extraction into the very quality of the image, which disintegrates as a result. The films deny above all the reduction of Earth into a stable ground on which Man might stand vertically as an autonomous ego separate from, and dominant over, the dusty land beneath his feet. This separation is necessary to found the capitalist property-relation with the Earth. Implicitly the films reject the legacy of Cartesian perspective which dominates the relation of the realist image with its spectator. In the perspectival tradition, the spectator stands vertically, as the image faces him on a fronto-parallel plane like a window looking onto the

20 Daney 2018.

world. The resulting separation of beheld object-world and the vertical beholding object, as well as the mathematical homogenization of space allows for its formal subordination to logistics, making Nature into a standing-reserve.<sup>21</sup> Ignoring multiplicities and singularities, perspective desacralizes the object-world by introducing a relation of ‘objective’ fungibility between various bodies and spaces. In this sense, perspective is key to the emergence of land as a capitalist commodity. As a reified, scalar operation it “compares things based on similarity while hiding their difference” – reducing their relations to hierarchies of distance and size.<sup>22</sup> This repression, argues Chris Lukinbeal, makes scale – and perspective – an “(un)stable representational analogy” that must foreclose the very schizophrenia of its founding moment. Take the vanishing point. While it is nominally the site where represented objects become infinitesimally small, the vanishing point “holds that which lies beyond the image at bay”: thereby bifurcating the very field of vision into dyads of visible/invisible, scalable/non-scalable, etc. Only by excluding the infinite Real – the non-scalable, the formless – can a seemingly stable, ‘objective’ relation between the subject and world be established. The image here therefore acts as a surface of separation, subordinating both subject and world to a pacifying, homogeneous calculus of reason. By breaking up the image and eliciting an active relationship with its surface, both *Leviathan* and *Behemoth*, I argue below, undermine this homogenizing logic in the (vertical) perspective system.

In *Leviathan*, Castaing-Taylor and Paravel choose to mix the low-fidelity, glitchy aesthetic of consumer-grade GoPro cams and in-built mono recorders with the sharp, jagged HD digital image, which swarms the screen space with noise. Large parts of the film are shot at night, with only the lights on deck and fishermen’s bodies for illumination. We strain to make sense of visual data, and even when we can identify objects, there is an excessive noise that remains unresolved. This lo-fi yet high-res aesthetic constantly breaks wholes

21 Jay 1988, 9–10.

22 Lukinbeal 2012, 1.

down into vital, glimmering shards: the HD image into motley indistinct pixels. Perception must turn molecular to grasp objects and orient in this turbulent milieu. *Leviathan* returns us in this way to the occult night of the ocean, to the turbid, turbulent surface of water [Fig. 4].



Fig. 4: The image almost breaking down into noise, into vital shards. Fishing at night in *Leviathan*.

While it could be put in the lineage of sea-monster films, *Leviathan* differs from their generic logic most in the site designated as a source of horror. Where other ocean monster myths and films make the boat a ‘minimum ground’ for humans to live on within a hostile aquatic environment – a fragile surface keeping them safe from the malevolent depths ruled by the monster – *Leviathan* locates horror not down there, but at the surface of water. For it is at this surface that extraction operates, where fishes dredged from the deep are hauled, gutted, culled and processed at breakneck speed. *Leviathan*’s sensory violence collapses in this way two distinct causes of horror – the industrial slaughter of fishes, and the alien oceanic milieu which reveals human finitude – into a super-charged affect suffusing the total complex made up by sea, sky, man, animal and machine. While *Leviathan* is much celebrated for its immersive experience, it does not offer the kind of frictionless immersion championed by, say, James Cameron’s undersea trilogy. The latter fulfils a teleological arc in



which advances in both undersea imaging technologies and access vehicles culminate in a merger of expanded IMAX screens and the expanded ocean (which has been made navigable, and therefore non-threatening).<sup>23</sup> In contrast, *Leviathan* sees the expanded access to the ocean and advances in perceptual technologies as necessarily related to the capital's search for new frontiers. It breaks with the cult of clarity and serene translucence, which uncannily evokes the romanticism dogging the frontier imagination. *Leviathan's* immersivity is deeply marked by the violence of extraction at the turbulent surface of water, which acts as the interface between the oceanic depths and the capitalist metabolic complex of the fishing industry.



Fig. 5: The fragmentation of the panoramic image in *Behemoth*, as the narrator (Dante) appears within the frame.

*Behemoth's* landscape panoramas are rent into shards too – like the pieces of a broken mirror that cannot be put back together – every time the narrator (Dante in Zhao's allegory) intermittently appears within the frame. Lying naked like a fetus curled up on the toxic landscape, Zhao's Dante is a poetic if literal figure of bare life in the Anthropocene [Fig. 5]. Rejecting the verticality of autonomous Man, who separates himself from the dusty ground on which he stands, Zhao posits in this way an ethical, horizontal relationship of the body

23 Crylen 2015, 146–194.

to Earth. His stand-in figure, Dante, accepts the risk of contamination and harm in the zone of extraction as an equal among the miners/workers, without submitting it to the risk-averting technologies of securitization and speculation. Another way Zhao disrupts the seamless panoramic image is through the figure of the guide Virgil: here a common miner who wordlessly carries on his back a mirror. Described as “a heavy portrait of the dead” by the narrator, this mirror turned towards offscreen space holes into the picture plane to reflect bits of the rocky dusty landscape, far and near, and an azure sky. The outside thus enfolded in the image changes dynamically with every small angle shift during the guide’s weary journey [Fig. 6].



Fig. 6: The guide Virgil, a common miner, carries “a heavy portrait of the dead” on his back in Behemoth.

While it encourages symbolic readings, Zhao’s use of the mirror points more towards Robert Smithson’s *Yucatan Mirror Displacements* (1969) or Robert Morris’s *Mirror* (1969) – for one, because of their shared interest in a properly geological perception of the ravaged, entropic Earth.<sup>24</sup> In *Yucatan Mirror Displacements*, Smithson embedded mirrors in grid-like forms within soil, rock and vegetation in many sites across Yucatan to “reflect and refract the surrounding environs,

24 In other sequences, Zhao cites Smithson’s *Asphalt Rundown* (1969) while shooting trucks pouring coal and ore down giant stackyard slopes.



displacing the solidity of the landscape and shattering its forms” [Fig. 7].<sup>25</sup> In the companion essay, Smithson mused that the horizon stretches to infinity: it ceaselessly eats up space, suspends time.<sup>26</sup> The horizon line in perspectivism serves as the anchor for rationally organizing space: the degree zero of scale where the unstable relation between the limited regime of the visible and the infinite universe beyond is repressed.<sup>27</sup> Driving on a highway, Smithson saw this repressed *mise en abyme*. At each moment, his car almost touched the horizon, yet it was thwarted by a constant outwards recession: the horizon “line [was] in no way linear.”<sup>28</sup> Following Aztec beliefs of mirrors as portals into other-worlds, he wished to gaze into the immobile eye of time at the horizon. Zhao’s mirror displacements – like Smithson’s – upset the distant horizon as the degree zero of ‘rational’ perception, improbably enfolding earth and heaven into each other. Everything gets mixed up, chaos looms at the edges of scalar organization. Entropy is revealed as the generative principle which always has the last laugh against the hubris of order. For Smithson, monuments carved proudly out of Earth are “ruins in reverse” betraying a “failed immortality and oppressive grandeur.”<sup>29</sup> Zhao agrees. In the finale, when we follow the guide to ghost cities where all is perfect architectural form, we see these hallucinatory ruins in reverse. The neatly ordered high rises flit in and out of the guide’s mirror: appearing and disappearing in moments. Monuments to ideal form and the precise scalability of capital evaporate into the air like a mirage.

25 Spector n.d.

26 Smithson 1996a.

27 Lukinbeal 2012.

28 Smithson 1996a, 119.

29 Smithson 1996b.



Fig. 7: Robert Smithson's Yucatan Mirror Displacements (1969).

### III: The Violence of Separation: Formless and the Otherness Inherent to Life

While *Leviathan* and *Behemoth* disrupt Cartesian perspective and scalar imaginaries, they are yet a mere interval away from capitalist rationality. In fact, if we strip away their monstrous references and strategies of estrangement, we get the most rational film genre in history:

the ‘factory film’ whose structure reflects the ordering of Fordist production.<sup>30</sup> Both films fastidiously document the industrial labor typical of factory films: *Leviathan* shows us fishes being hauled, sorted, gutted and stored; *Behemoth* the digging, loading, and sorting of ore and smelting of metal. In films that are otherwise disorienting, these shots are closest to an anthropomorphic organization of the image.<sup>31</sup> Yet what prevents the films from settling easily into the factory film is their proximate presence to *excessive materiality*: formless, monstrous matter with the vital powers to affect other things, create and destroy. This monstrous matter evokes primal fear and revulsion, but may also evoke wonder. In a key scene of *Leviathan* where the camera dips in and out of the water in tune with flying seagulls, we see this sudden shift in affects. The nauseating fish chum thrown away turns magically into an ethereal sublime under water. As if in a Brakhage film, dead fish parts are revived by the interaction of camera and turbulent water into a procession of after-life [Fig. 8].

30 Hediger – Vonderau 2009.

31 The *Leviathan* makers especially betray a difficulty in consistently following through the non-anthropocentric promise/premise of their film in the cramped scenes shot inside the boat’s cabin. There’s an awkward shift in tone: the camera turns almost boringly intentional, lingering on details (e.g. a sailor’s mermaid tattoo) that are de rigueur in observational documentaries.



Fig. 8: Fish chum thrown overboard turns into an ethereal procession of after-life thanks to the turbulent interaction of camera and water, in *Leviathan*.

In *Behemoth* excessive materiality persists in the malevolent dust which permeates everything from the air to human skin and lungs. The workers spend hours at home scrubbing it; they die too soon of congested lungs. Yet, as befits the dual affects of monstrous matter, dust is wondrous too: the more the Earth is blasted out, the more impressionist and beautiful the image becomes. The hot liquid metal of the steel plant sequences is monstrous too; threatening to transmute all bodies close to it. In Zhao's meticulous design, the liquid metal (the Earth purified to its volcanic core) emits an inhuman screech like virulent sci-fi aliens; its hot luminosity turns the image a pure, solar red that consumes all matter. Standing a few feet apart from this fiery metal monster, workers prod it with long bars. The heat bakes their bodies, metal flecks penetrate their flesh: disavowed, waste matter eats into disavowed, wasted bodies [Fig. 9]. *Behemoth's* excessive matter thereafter splits in two: on one hand, the liquid metal is shaped by factory-work into arrays of finished products; on the other, industrialized waste accumulates in and poisons workers' bodies and the environment, desertifying the steppe grasslands. When in the Paradise section, we follow a batch of steel from the factory to the ghost cities of Ordos, all the formless materiality of ore dust and liquid metal has been meticulously excluded. Between

blocks of identical high rises run neat roads on which the only humans presence are cleaners who maintain order in this world of ideal, geometrical forms. The paradise-city is an immaterial hallucination with no relation to the dust of the Earth [Fig. 10].



Fig. 9: The monstrous materiality of metal in the factory sequences of *Behemoth*.



Fig. 10: The neat, ideal geometric forms of Ordos, where all dust is religiously excluded.

What then distinguishes *Leviathan* and *Behemoth* from factory films? It is their foregrounding of capitalist logic which separates the



excess materiality of nature from capital's own rational utilitarian sphere. While factory films show matter in stages of plastic transformation, they privilege form and order: suppressing the very formless materiality that precedes and makes the commodity. Cited by many as one of *Leviathan's* key influences, Georges Franju's *Blood of the Beasts* (1949) could be the first factory film to turn its cold operational gaze back to this excess materiality underlying commodities. Taking his camera into the abattoir – the inspiration for Henry Ford's assembly line – Franju intended to show not so much the violence of mass slaughtering as the deft logistics which underpinned it. He counterposed this order with the messiness of death: the blood and guts littering the floor, the quivering flesh emitting smoke. In the abattoir, “death cries and mechanical noises are almost impossible to disentangle.”<sup>32</sup> Twenty years before Franju, Georges Bataille wrote of the abattoir as permeated by the sacred; used in ancient religion for both praying and killing. Yet he declaimed, it produces repulsive horror in modern men; who “quarantine it like a plague-ridden ship outside the city.”<sup>33</sup> What fascinated Bataille was the “civilized scotomization that structures [the abattoir's violence] as otherness, as heterogeneous disorder.”<sup>34</sup>

The abattoir is exemplary of the separation of sacred and profane realms that Bataille detected in modern society as such. Like Weber and Durkheim, Bataille saw modernity as a profaning process which severs the world from its contact with the sacred and makes it into a homogeneous reservoir of form, order and use. Yet the sacred realm which supplies the profane world with boundless energy and exceeds the capacity for use is not fully disavowed. It is split into two poles: a right-hand sacred concerned with elevated things like institutional religion and aristocratic wealth; a left-hand sacred populated with base matter like the abattoir's bloody refuse.<sup>35</sup> While the former is venerated in modernity as a pure ideal promising transcendence in

32 Giedion 1948, 246.

33 Bataille 1929.

34 Bois 1997, 46.

35 Bataille 2018.

the future/afterlife (so long as one works hard, does good deeds, etc.), the other pole occupied by the accursed excess of production is consigned to shameful darkness. Bataille argued that modern social violence lies in the repulsion of accursed excess from the profane world, since it necessitates that a disavowed underclass perform the labor of separation out of sight.<sup>36</sup> *Behemoth* visibilizes this violence inflicted on the bodies and souls of a racialized underclass fatally entangled in the separation of accursed matter: workers waste away without care, their lungs black with tar.

In *Accursed Share*, Bataille extended his critique of separation into a full repudiation of political economy from the perspective of excess. He argued that the utilitarianism of political economy – the ideological science of capitalism bar none – is underwritten by a false doxa that reads scarcity *into* the state of nature and sanctions endless accumulation and productivism. This disavows that the general economy of life on Earth begins with the sun's heedless gift of energy which exceeds all mechanisms of capture. If after Carnot, the entropic cosmos is seen as constantly squandering energy, life for Bataille consists in participating in this squander once the capacity for growth has been satiated. Bourgeois political economy, the handmaiden of capital, ignores this cosmic tendency towards expenditure and takes the restricted view of a system endlessly fighting off entropy, decay and death. Foolishly privileging conservation, form and verticality, capital fails to reconcile with the sun's disinterested gifts of energy, even as it uses part of this energy to generate value. For Bataille, formless excess serves, then, two purposes in capital's restricted economies. It is first the sole 'ground' and source of value for capital: the outside which rejuvenates the system. Yet its very heterogeneity to the cult of utility ensures that the formless remains unassimilated as waste after subsumption. This remaindered formless is made monstrous and repelled by the system of production. For Ba-

36 Ibid.

taille, (capitalist) reason begets monsters in the very process of profaning the world.<sup>37</sup> Reducing nature into tame ideals reconciling the good, the useful and the true, reason criminalizes *natural aberrations*, the innate formlessness of the universe, into monsters attacking ideal forms. As Jeff Cohen says, monsters are scapegoats to “police the borders of the possible,” to neutralize radical difference by coding systemic contradictions into an external threat.<sup>38</sup>

The monsters in *Leviathan* and *Behemoth* thereby foreground both the scalar mangle of extraction – the implosion of rational, ordered space by more-than-human forces – and the constitutive, yet repressed heterogeneity undergirding the capitalist governance of life. Ultimately, these two valences of the monstrous are not even distinct. One glimpses the monstrous only in crossing over from the homogeneous realm of profane utility (where all is rationally ordered and scaled) to the *other* side at the extractive frontier – which is an interface between the two realms, where the formless is remaindered and useful matter recuperated from the general economy of life. What makes the heterogeneity subtending life on Earth terrifying is that, from this perspective of what Bataille called general economy, metabolism needs all forms of life to pass through an intermediate stage of non-life (death, decay), only to be recuperated as energy for other living beings. To survive, Man must consume as food what was only recently a living being. And for shelter, cooking or industry, he must use up energy stored in recent or ancient forms of life (as wood, animal fat or fossil fuels). The metabolist perspective then dissolves the absolute opposition of life and death. Death is a mere punctum in an ongoing carnival of life rather than its cessation. Bataille proposed, in this very sense, expenditure contra conservation as a natural principle: death is ultimately a glorious expenditure that frees up living space, gifts life to other beings, rather than an undesirable contingency that must be deferred indefinitely. But because capitalism cannot accept this principle of gifting – i.e. non-productive expenditure

37 Bataille 1985.

38 Cohen 1996, 12.



voided of self-interest – it is perpetually haunted by visions of scarcity and consumed by an accumulative drive.

This has horrifying consequences. For Bataille, the modern society of unequally distributed risks is founded precisely through the reduction of death to a mere contingency that must be managed by technologies. “The greater the degree of mechanization,” wrote Siegfried Giedion on automated abattoirs, “the further does contact with death become banished from life.”<sup>39</sup> However technology is prone to accidental breakdowns; constrained by its inadequate flexibility to meet contingencies posed by its being in the world. Because the living human form possesses an inherent plasticity and a socialized general intellect, it is called upon to augment machines precisely where they reach the limits of their abilities. Particularly in zones of extraction – which are always at the outer edges of the known, of rules and laws – machines are inadequate to grasp the molecular flows of matter when working on/with the formless excess of the world. As early proponents of totally mechanized abattoirs realized, “no mechanical instrument gave entire satisfaction [in carving the animal up]. The knife-wielding hand was still needed.”<sup>40</sup> “Only the organic can adapt to the organic.”<sup>41</sup>

Yet the living, organic labor that augments machines in the age of automation is devalued, made useless by updates. Resource miners are no more the heroic adventurers of yore, key to capitalist primitive accumulation; they are a racialized, gendered class of bodies who must deal with the accursed share out of sight, in silence. While crucial to extraction, they are ejected by succeeding cycles of capitalist accumulation; rendered into a surplus population that cannot be integrated as citizen-subjects within the formal circuits of the economy and nation-state.<sup>42</sup> Like the formless matter they help separate into useful form (subsumed by capital) and an accursed waste, resource

39 Giedion 1948, 242.

40 Ibid. 240.

41 Ibid. 237.

42 On this production of material and social waste and the form/formless dialectic, see Franklin 2016.

miners constitute a formless, remaindered bare life: a ‘social waste’ without care, whose labor is unreciprocated and value undetermined (*Behemoth’s* miners, suffering with the dust of the Earth inside their lungs). If species metabolism is “the interface between inside and outside, the space of conversion [...] of matter to energy, of substrate to waste, of synthesis and break down,”<sup>43</sup> then only those who have been reduced to “a stripped-down human form” are called upon to interface with the formless at extractive frontiers.<sup>44</sup> The fishermen in *Leviathan* and miners in *Behemoth* are such figures of bare life possessing the extreme habitual intelligence required by extraction. They can keep their center of gravity, achieve a liminal verticality, in the midst of turbulence and work with/on the molecular flows of formless matter. These monstrous laborers are the sacred nucleus of our contemporary political economy/ecology.

### Conclusion: Hobbes’s *Leviathan* and political ecology today

The banishment of death through technology and social segregation cannot yet guarantee an actual immortality. The much abhorred universal law of entropy catches up finally with any organism or system, converting form back into the decaying formless. In the last section, I want to look at a third function of the monstrous as a technology to cheat death and decay – a figure of anti-formless – turning to Thomas Hobbes’s philosophy. Not only do *Leviathan* and *Behemoth* share names with the political tracts Hobbes wrote on the English civil war of 1641-60, they approach the problem of decay from the exact opposite perspective.

The civil war was, for Hobbes, symptomatic of the entropic tendency in nature. States disintegrate periodically due to a self-annihilating flaw in nature. Hobbes’s prognosis on the state of nature as “war of all against all” derived from his singularly pessimistic anthropology: men are equal only in their *natural inclination* and capacity to kill each other. Even the weakest man may kill by the strongest “by

43 Landecker 2013, 193–194.

44 Tsing 2003, 5103.

secret machination, or by confederacy with others.”<sup>45</sup> Hobbes’s view of human nature, Adriana Cavarero writes, is “characterized by a horizontality on which violent and congenitally warped individuals move and clash.”<sup>46</sup> This lawless horizontal state of nature can only be overcome by “an omnipotent and terrible vertical political sovereignty” which rectifies the natural inclination to kill and posits a fundamental asymmetry of power.<sup>47</sup> Hobbes finds it in the biblical image of *Leviathan*. In the famous frontispiece, *Leviathan* is depicted as a macroanthropos towering over a valley kingdom, who unites worldly might (sword in one hand) with ecclesiastical power (crozier in another) within a ‘body politic’ made of subjects who turn to the sovereign head in submission. Subsuming them into a sovereign verticality, the *Leviathan* does not however return their gaze but looks out to the reader as the sole authority of legitimate violence. It monopolizes their collective will towards violence into a monstrous body with ‘no equal on Earth.’

As Johan Tralau argues, in the monstrous body of the *Leviathan*, Hobbes tried to reconcile several beings: it is man, animal, machine, polity, sovereign, state and mortal God united in an aggregate “Person of the Commonwealth.”<sup>48</sup> Hobbes, an assiduous rationalist, abhorred metaphors for being the preserve of the clergy, and preferred separation of church and state – the civil war according to him largely caused by doctrinal rivalries born of fuzzy theological interpretations – yet he was not averse to draw upon mythical images of diverse inspirations to strike fear into the heart of his readers, thereby forcing them into submission.<sup>49</sup> If, per Jeff Cohen, “monsters are never created ex nihilo” but assembled out of chosen fragments from various

45 Tralau 2007, 63.

46 Cavarero 2016, 75.

47 Ibid. 76.

48 Tralau 2007, 69.

49 Among these inspirations are the godlike “living statues” of Asclepius, the royal effigies at Westminster Abbey, optical experiments with perspective by Jean-François Nicéron, as well as contemporary occult literature on catastrophe. See Bredekamp 2007 and Garton 2017.

forms, only to be assigned a radical alterity that makes them irreducible to constituent parts, Hobbes is not lapsing into irrationality while fabricating the monster *Leviathan* but following a sound logic. This lies, says Tralau, in the radically exceptional position of the sovereign in Hobbes's scheme. While individuals consent to "renounc[e] their primordial right to every thing, even to one another's body" in lieu of protection from harm, the sovereign is himself not a part of, but outside, the covenant.<sup>50</sup> The sovereign is like the accursed laborer of extractive economies, its internal contradiction exempted – yet he occupies the opposite pole (the elevated/right hand of the sacred in Bataille's terms). *Leviathan* is eternal, transcendent, omnipotent, able to meet contingencies without being held back by common law since it exists outside of the natural cycle of decay. Hobbes's conception of time is catastrophic. The state is always disintegrating; so the *Leviathan* acts as a restrainer ruling over the widening chasm between the moment of exception and the coming apocalypse. Yet this is only to found the modern liberal state where interdiction on horizontal war-of-all-against-all allows the pursuit of other noble, verticalizing endeavors like science, arts and commerce associated with the classic philosophical figure of *homo erectus*.<sup>51</sup>

In this sense, Hobbes's *Leviathan* inaugurated the modern regime of accumulation managed today by states and corporations (in England, this regime was already shaping up as the British colonial empire). Paradoxically, as Hobbes realized, accumulative regimes could only be founded on the image of scarcity, by proscribing excessive expenditures under the sign of a perennial catastrophe. Hobbes is diametrically opposed to Bataille though the state of nature is an image of horizontal excess and violence for both. For Bataille this horizontality and the entropic tendency towards decay is the ground of life – death as a mere punctum – whereas for Hobbes they mean the cessation of life, a lapse back into a cyclical pre-civilizational time.<sup>52</sup> The monster, for Bataille an index of the natural tendency of things

50 Tralau 2007, 73.

51 See Balibar 2017, 98 and Cavarero 2016.

52 See Stoekl 2007 for Bataille's environmental ethics.

to deviate from their ideals, is for Hobbes an ideal representation frozen in time outside of the state of nature. Comparing Hobbes and Bataille's opposing attitudes towards decay and the violence of the formless assume particular relevance in light of the reigning consensus in climate change politics, the dispositif of planetary sovereignty which Geoff Mann and Joel Wainwright aptly name Climate Leviathan.<sup>53</sup> Our response to futurity in the Anthropocene is fundamentally shaped by the same fear and incomprehension that underpin Hobbes's construction of the Leviathan. Since the Anthropocene defeats any rational correlation between our individual actions and climate events we submit power to Climate Leviathan in the desperate hope that it will ward off the looming precarity using its powers to announce the state of exception. Climate Leviathan's moves in the coming years may include anything from a global carbon regime established through pacts at supranational summits to a green Keynesianism within the framework of liberal capitalist markets. Yet it is inconsistent for leaving capitalism's ever-expanding search for new extractive frontiers untouched. Instead it merely redistributes ecological risk from the developed Global North to the Global South (where most rare earth mining crucial to renewable energy happens, and which is likely to bear the costs of carbon trading most heavily).<sup>54</sup> The very utilitarianism and vertical sovereignty subtending the planetary regime of accumulation goes unchallenged as the extraction of value from the formless is further repelled outwards from the heart of 'civilized' society.

Bataille's ethics of expenditure, excess and horizontality suggest an alternative to this conjunction. It works against the profaning logic which uses-but-disavows the formless, thereby disregarding the heterogeneity constitutive of life. If, as Cohen says, monsters police the borders of the possible, a Bataillean ethics for the Anthropocene begins with an uninhibited transgression of these limits, accepting the

53 Mann – Wainwright 2013.

54 For a decisive critique of the Green New Deal imaginary, see Bernes 2019.

very risk of precarity and self-annihilation in such a trespass. My argument is that *Leviathan* and *Behemoth* open on to such possibilities in two distinct ways. First, they foreground the formless base matter which is the very ground of life on Earth yet gets remaindered during extraction. This is doubled by a foregrounding of those laboring figures that interface on behalf of us at extractive frontiers. On a more intensive plane, the films push us viewers into a limit-state of perception exceeding human cognitive capacities by internalizing this proximate encounter with the formless into an aesthetic of estrangement. As viewers, we strain to orient ourselves, make sense of extractive ecologies where normative scales fail to ground us. While we do not share the precarities of the frontier workers in *Leviathan* and *Behemoth*, their aesthetics of estrangement decodes perceptual habits, opens us to contingency and an encounter with the entropic cosmos.

By pushing the digital image beyond limits to a veritable mosaic of pixels, *Leviathan* in particular turns perception into a metabolic process. We feed on digital noise, reaching beyond pre-patterned information, as our bodies remain the only available frame to compress this flow of excess into provisional blocs of sense. *Leviathan* gives us what Shane Denson has called “discorrelated images” and “crazy cameras” in the context of Hollywood post-continuity editing. Freed of any correlation with “human embodied subjectivities and (phenomenological, narrative, and visual) perspectives,” crazy cameras act as “transformative, transductive “mediators” of the subject-object relation itself.”<sup>55</sup> Each digital image generates more microimages in the intervals of what has been actually filmed than any naked eye can detect. Even the digital screen turns into a camera in that it ceaselessly generates new images during each play of the video in singular conditions of feedback between spectator and media system; working on subterranean affect modulations determined by our bodily thresholds for registering molecular signals. This is a metabolic media ecology in that:

55 Denson 2016, 193.

Metabolic processes are the zero degree of transformative agency, at once intimately familiar and terrifyingly alien, conjoining inside/outside, me/not-me, life/death, old/novel, as the basic power of transitionality—marking not only biological processes but also global changes that encompass life and its environment.<sup>56</sup>

In *Leviathan*, these metabolic “disrelated images” join in the very metabolic rift ripping through the general economy of life/non-life in capital’s resource frontiers. Images here are no more simple representations of a pre-given world; they are the substrate of our sensuous, bodily existence within the turbulent worlds of capital. If monsters are images of the formless, *Leviathan* and *Behemoth* ask us to confront the monstrous without recoiling in horror to a regime of fear that, proscribing violence from modern society, only condemns racialized, gendered and classed bodies to bear this violence for eternity. Hobbes realized this primal mythic power and political valence of monstrous images. His state theory in *Leviathan* banked largely on a percussive theory of images – a theory of optics – in which “vision reacts to the pressure created by an object emitting light in pulsating waves that travel through ether.”<sup>57</sup> Just as vision works by exerting pressure for Hobbes, his notion of politics works by evoking monstrous images such as *Leviathan* to persuade by fear. To side against Hobbes with Bataille and the films (that share names with Hobbes’s texts) means precisely to take images as a serious ground of politics, while rejecting the horrific catastrophism inherent in the Hobbesian imagination.

56 Ibid, 208.

57 Bredekamp 2007, 30.

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# **What's so critical?**

## **Pictures of the critical zone and art education**

Magdalena Eckes

### **1. Pictures and art education as ingredients of the critical zone**

This volume represents the critical zone by numerous pictures of cones, slices, spheres, landscapes... still I like to add another picture to this collection.



Magdalena Eckes: What's so critical? - Vertical Earth-Kilometer

This picture gives a glance on the top of the lower atmosphere and as this girl stands in front of the Fridericianum in Kassel on the end of Walter de Maria's Vertical Earth-Kilometer, it can also be thought of as stretching out in the direction of sterile rocks. In his paper "Some Advantages of the Notion of 'Critical Zone' for Geopolitics" Bruno Latour takes

'critical zone' to mean a *spot on the envelope of the biosphere* (Gaia's skin in Lovelock's parlance) which extends *vertically* from the top of the lower atmosphere down to the so-called sterile rocks and *horizontally* wherever it is possible to obtain reliable data on the various fluxes of ingredients flowing through the chosen site (which in practice generally means water catchments). 'Ingredients' here does not only mean chemicals or physical elements since 'EU legislation', 'agricultural practices' or 'land tenure' might be part of the data to recover from the study just as well as the amount of nitrates.<sup>1</sup>

Now the ingredients that I like to focus on are pictures (in a wide sense of the word, also including the vertical earth kilometer from Walter de Maria in Kassel in front of the Fridericianum under this girl's feet) and art education as a practice that works with and around the ingredient 'picture'. Looking at pictures and art education as ingredients of the critical zone would then at first glance be a mere description of the roles they play within that zone. But the word 'critical' in 'critical zone' also implies a normative idea. To cite Latour:

Thus the notion entails an attention, a capacity to feel what happens and the necessity to be cautious, careful, clever and informed in a way that would be different if the zone was just a chunk of 'space'.<sup>2</sup>

A possible irreversible transformation of the critical zone is taken to be something that should be prevented. Can pictures play a role in this prevention? Can they be critical in a sense that makes as "cautious, careful, clever and informed" and thus change our actions?

1 Latour 2014, 2

2 Ibid.

## 2. Pictures and art education as critical agents in the critical zone

The United Nations have 2015 emphasized the role of education in reaching the Sustainable Development Goals.<sup>3</sup> But can art education as a discipline concerned with pictures help to reach these goals? My thesis here is that art education can contribute to a critical thinking about the critical zone even though this might imply a shift of focus on what to teach and learn. In what follows I will develop how this might be done and then end with a summary of three consequences for a possible ‘critical zone’ critical art education.<sup>4</sup>

### 2.1. Pictures as critical agents in the critical zone

If we take pictures not only as ingredients of the critical zone but as possible agents, the obvious question is how they could act upon viewers and thus reveal something critical? There is an obvious answer to the question: whatever might be something critical that becomes visual can somehow be represented in a picture. But how can these pictures turn into a normative force for our actions? What can be the critical power they reveal that is more than a mere representation? In other words: What can make pictures in **that sense** critical?

Birgit Schneider takes pictures as the elements that can lead from knowledge (about serious problems of the critical zone like climate change) to action by first informing about outcomes of scientific research and second influencing political discourse.<sup>5</sup>

3 See for example Goal 13 climate change, target 13.3.: “Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning”.

<https://www.un.org/sustainabledevelopment/climate-change/>

4 Critical art education by now focuses especially on postmodern (postcolonial, gender sensitive) questions of power. These questions are addressed by several international art educators (in the german speaking realm for example Carmen Mörsch 2012).

5 Schneider, 2018, 7-8 “Ein wichtiger Weg vom Wissen zum Handeln führt über die Ästhetik. Denn in beiden Fällen – der Aufklärung über den Klimawandel sowie der Beeinflussung politischer Handlungen – sind Bilder Instrumente, Medien und

But from the resulting actions so far, we can draw the inference that somehow somewhere things go wrong – the pictures that are viral in actual climate debates are not powerful enough to make a change of action like the Rose Diagram did.

Florence Nightingale's *Diagram of the Causes or Mortality in the Army in the East* is the key example Birgit Schneider uses to show how pictures – and in this case diagrams – can change actions. The Rose Diagram demonstrates that more people in military hospitals died due to bad hygiene conditions than as victims of the battlefield. And it was this diagram and not the fact itself that led to the implementation of new hygiene standards. So, it is a good example to show the force pictures can have. And it leaves us with the question, why pictures of critical things in the critical zone – like climate change – do not have a similar effect – and how we can make them more powerful.

Birgit Schneider draws three consequences<sup>6</sup> for pictures of climate change that might as well hold for other processes that put the critical zone under pressure, to make them more powerful:

- (1) We need more pictures of climate change that show a heterotopic pluriverse of perspectives (especially of possible futures).
- (2) We need less pictures of climate change that are stereotypes.
- (3) We need new pictures of/ and with other protagonists.

Within her drain of thought she focuses not only on diagrams that visualize scientific knowledge but also on pieces of artwork. Because, as she states, art inhabits alternative possibilities of making abstract, scientific things sensible.<sup>7</sup> She takes *Most Blue Skies* from

Schauplätze, über die das Klimawandelwissen in Richtung politischer Kontexte umgeschlagen wird.“

<sup>6</sup> See Schneider 2018, 390–391

<sup>7</sup> Schneider 2018, 47 "Kunst besitzt alternative Möglichkeiten der Erfahrbarmachung abstrakter, heute oftmals rein wissenschaftlicher Gegenstände. Denn das Wissen um

Lise Autogena and Joshua Portway to be an artwork with exactly this potential. The work consists in an installation that the artists themselves describe in the following way:

Most Blue Skies I + II is a computer generated installation that attempts to find “the bluest skies” in the world. The project measures the passage of light through particulate matter in the atmosphere and calculates the exact colours of the sky at billions of places on earth. Using a complex system of satellite data acquisition and atmospheric simulations, the project continuously calculates the place on earth that has the bluest sky and visualises the best possible approximation to that colour, as well as the name of the place where you should stand to see that sky. Most Blue Skies I + II combine atmospheric research, environmental monitoring and sensing technologies with the romantic history of the blue sky and its fragile optimism, and addresses our changing relationship to the sky space as the subject for scientific and symbolic representation.<sup>8</sup>

A further example that I like to give is Julian Charriere’s *An Invitation to Disappear* as shown in the Kunsthalle Mainz described by the institution:

Step for step, room for room, the visitors approach a rave. They follow the rhythms and sounds of electronic music, becoming ever more submerged in a setting veiled by wafting mist until they reach the heart of the exhibition: a film shot in a palm-oil plantation in the Far East. It is a film that persuasively presents the excessive, exploitative decimation of nature to visitors who are intoxicated by music. The ubiquity of palm oil as a material is analogous to our total lack of interest in how it is produced; the physical absence of people changes abruptly into the omnipresence of their actions. Image and sound are consolidated into metaphors not only for people’s belief in progress but also for their short-lived interests – and for the enormous consequences that these have. At the same time, they conjure up collective trance-like states and experiencing the transcendence of time.<sup>9</sup>

Both examples and their descriptions show that artworks can have a critical potential and might help us gaining new perspectives and changing our actions (and finally eventually make us work on things critical in the critical zone). There are a lot of suitable works around, not just in contemporary art. But how good are they to be seen? Or in other words: How present are they in everyday life (what they should be if they are to have an impact on our actions)?

den Klimawandel liegt auf der Ebene der Information in Form von nüchternen globalen Grafiken und Kurven vor, nicht jedoch auf Ebene der ästhetischen Wahrnehmung und der Erfahrung. Wie man allerdings vom Wissen zum Handeln oder von der Ästhetik zum Handeln kommt – das wird das Thema der kommenden Jahre in allen Bereichen der Klimawandelkommunikation sein.“

8 <http://www.autogena.org/mbs.html> (14.2.2019).

9 <http://kunsthalle-mainz.de/en/exhibitions/archive/13> (14.2.2019).

## 2.2. Pictures with critical potential in art education



Take for example the *Vertical Earth-Kilometer* from Walter De Maria. This is a piece that fits quite well into the critical zone – stretching out one kilometer from where you stand – with only the small end of it to be seen (or not to be seen, if you stand on it). It is in this sense a representation of things that are critical and not to be seen, also working with the idea of giving back a metal to the earth that has been taking from it (which is really one of the problematic things within the critical zone). But the critical potential has to be realized to make Walter De Marias *Vertical Earth-Kilometer* a critical thing.

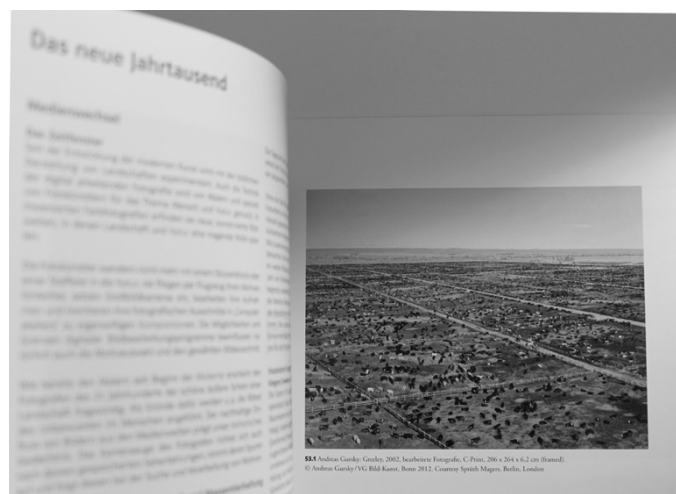
Art education in school could be the place where these works can be ‘shown’ to a larger public (most times by reproductions) and their critical potential could be actualized. Nevertheless, a short look at actual schoolbooks for art education in German language



demonstrates that there are only few artworks represented that would suite my idea of critical potential and even if, the ways of working with these pictures recommended by the books themselves do not focus on this critical potential. Let me give an example. “Landschaftsmalerei” – a publication consisting in a book for pupils and a handbook for teachers that would at first glance be destined to present artwork with a critical potential for our actions in the critical zone – explicitly states at the beginning of the handbook for teachers (in my translation):

In contemporary landscape art important sections of /or direct interventions in landscapes are not only based on aesthetic attractions. The works can also be understood as a demand to protect landscapes and environment.<sup>10</sup>

But if you take a closer look at the pictures used in the book for pupils you will quickly realize that they are chosen to represent a (male white western) history of landscapes and to analyze the examples of this story in a formal (and not in a critical) way.



A look into „Landschaftsmalerei“ Photo: Eckes. Regenbogen-Brünink (2012), with pictures of Andreas Gurskys: *Greeley* (2002) (p. 52f) Original in colour.

- 10 Regenbogen-Brünink 2013, 7 “In der Landschaftskunst der Gegenwart beruhen bildwürdige Ausschnitte einer Gegend (für Gemälde, Fotos) oder gar direkte Eingriffe in eine Landschaft (Land Art) nicht allein auf deren ästhetischen Reizen [...]. Die Werke können u. A. auch als Aufforderung zum Natur- und Landschaftsschutz verstanden werden.“

The picture that might have the highest critical potential, Andreas Gurskys *Greeley* is discussed under technical premises. The goal of examination is not to reveal the critical potential (and to discuss how our actions might affect our environment and what we should do about it) but to analyze how this critical potential is derived by use of technical means.<sup>11</sup>

“Landschaftsmalerei” thus does not aim to actualize the critical potential of the picture, but to show how the critical potential is derived by the use of technical possibilities. Analyzing the connection between technique and critical potential becomes thus a foil that keeps the actual problem at distance. Of course, you might say (and it is fair to say this), this is exactly what schoolbooks on pictures of landscapes should do – their mission is to show pupils merely scientific instruments with which they can analyze and understand pictures (and to give them an orientation in male white western art history). But thinking about pictures and art education as ingredients of a critical zone might shift the focus in art education from discussions that stem from big questions about art and how it can find a way into education to the question of what kind of role pictures and art education could play in the critical zone with an emphasize on “critical”. And in that sense to move from a description of pictures and art education as ingredients to questions of the normative force of these ingredients.

If we want art works to make a change in actions and if we think art education (in school) is a place to do so, then we can't stop there, but we need to help actualizing the critical potential of those artworks.

11 Regenbogen-Brünink 2012, 52 “Durch diese ständige Wiederkehr und durch die betonte Monotonie entsteht eine negative Bildwirkung, die den Betrachter an Probleme der modernen Massentierhaltung erinnert. Das Landschaftsbild thematisiert etwas, das uns an unser Konsumverhalten erinnert, und weist so auf die knappen Ressourcen für die Produktion von Nahrungsmitteln auf der Erde hin.”

### 2.3. Pictures without critical potential in art education

Artworks with a critical potential are obvious candidates for a ‘critical zone’ critical art education, but they will always be a minority in the vast amount of pictures given. And they are not the most compelling ones.

The *Vertical Earth-Kilometer* from Walter De Maria is not a very sweet and compelling visual something. Isn’t a girl with a balloon from frozen Olaf something nicer to look at? And – for sure – does this girl not prefer to have a balloon of frozen Olaf in her hand than a quite abstract vertical kilometer under her feet?



Of course, she does – and this holds not only for small girls but for all or at least most of us. But at the same time (I’m so sorry) consuming balloons and other nice merchandise objects of a figure that lives in an independent micro-climate is already part of the problem (like consuming meat and palm oil is). And in this sense

pictures of frozen Olaf might also be quite critical – if we take them as such, if we start talking and acting not only about art, but also about these very compelling pictures in a critical way, that also has a chance of impact on our everyday behavior (and so, again, on the critical zone). In summary, if we take art education to be an ingredient of the critical zone that could have a normative impact, I would like to draw three main consequences

- (1) We need more pictures (artwork) of the critical zone with the potential to reveal what is critical in the critical zone (while keeping in mind the three notes Birgit Schneider made about those pictures).
- (2) We need to enable an actualization of this critical potential.
- (3) We need to talk about the critical contexts of those pictures and practices that lack an implied critical potential (in other words pictures that just seem to be innocent and/or fun).

My goal here is not say that the way pictures with a critical potential are treated in art education so far is generally wrong. What I like to emphasize is that if we take pictures and art education to be a relevant possible force on our critical actions in the critical zone (and the so called “Bildung für nachhaltige Entwicklung”, the education for sustainable development suggests this), then we should use more pictures with a critical potential, actualize their criticalness and talk about critical contexts of pictures. That way, we might still enjoy pictures of a frozen world, without forgetting what possible impact they could have on the critical zone.

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# **Imago Corporalis and Homeostasis. Exploration of the Critical Zone in the Range of Quasi-Materiality, Virtual Reality and Avatarial Embodiment**

Lars Christian Grabbe

## **Abstract**

Referring to Bruno Latours concept of the *Critical Zone* this article will argue for the potential of *Virtual Reality* (VR) as a specific pictorial tool for creating a “Gaia-graphic view”<sup>1</sup>, based on a so-called anamorphosis. Latours goal is to create a change of perspective and therefore a change in the mind of the viewer. Highlighting specific critical layers of the earth as a critical zone is much more efficient than a global or planetary view. So, we can describe the anamorphosis as a specific pictorial or representational mode for creating processes of meaning: “a distorsion of image made through an instrument or a change in perspective. Such anamorphosis allows us to shift from a planetary vision of sites located in the geographic grid, to a representation of events located in what we call a Gaia-graphic view”<sup>2</sup>.

There are already interesting VR prototypes existing that are effectively creating a change in perspective through a representational mode of distorsion, which means, that the classical concept of an image gets distorted in a productive manner. This distorsion is not a negative judgement with regard to the pictoriality of the VR image because it indicates a specific pictorial transformation. The classical

1 Arènes, Latour, and Gaillardet 2018, 1.

2 Ibid.

two- or three-dimensional image representation gets transformed by the total-immersive functionality of the VR technology into a physical or quasi-material image artefact. The quasi-materiality of the VR image and the whole VR environment are addressing not only questions of the degrees of distortion in combination with the correctness of perspective but also questions of the sensory efficiency of the depicted quasi-objects, the degrees of freedom of the user's performance with technology and the homeostatic experience as a relation of embodied media signals and sign-based cognitive states.

### Introduction: The Image and the Body

The concept of Bruno Latour's *Critical Zone* is very interesting for an image theoretical viewpoint, because the analytical description or discovery of the *Zone* can be productively realized by an image representation. The *Critical Zone* could be described as a synthetic concept that is highlighting a moment of natural dynamic and a moment of cultural dynamic. It seems to be obvious that the goal of the concept is not to create a dichotomy of nature and humans but more a systematic overlap of natural processes and cultural human actions. Latour is not directly addressing the problem of space or spatiality within the *Zone* because it seems to be his intention to focus more on the specific modes of human action: „critical zones define a set of interconnected entities in which the human multiform actions are everywhere intertwined“<sup>3</sup>. The human actions are complex with regard to natural dynamics and therefore the representations turn into very useful tools for analysis and description. So, it is plausible, that image representations or distortions could create anamorphic standpoints for a deeper understanding: “Not only are the human multiform behaviors fully immersed in the field study, but so are the findings of ‘critical zonists’ (if there is such a term) who are themselves part and parcel of the zone in which they intervene by making it visible through monitoring instruments and models.”<sup>4</sup>

3 Latour 2014, 3.

4 Ibid.

The following arguments would like to use Latour's standpoint of the specific image transformation, anamorphosis or distorsion to focus on a very exclusive kind of images: Images that are working in a receptive mode of *homeostasis*, which integrates main features of cultural dynamics (symbolic sign relations in virtuality) and main features of natural dynamics (sensory dynamics of physicality) to determine the structural integrity of the pictorial experience, whereby simultaneously, a performative and reflexive reference on modality, *quasi-materiality* and corporeality is triggered. Paradigmatic for a so-called visual *homeostasis* is the *TreeSense* media system that was developed at *MIT Media Lab*. It is described as a:

sensory VR system that transforms a person into a tree, from a seedling to its full-size form, to its final destiny. The person experiences what it feels like to be a tree by seeing and feeling her arms turning into branches and her body into a trunk. To evoke these sensations, we put electrodes at several key locations on the user's forearms to stimulate muscles and the skin, so that she can feel branches growing, a worm crawling, or a bird landing on her arm. This intimate, visceral experience dramatically creates an illusion of being a different life form, and thus develops a personal, immediate identification with a need of environmental protection. We put the user in a virtual environment with a first-person perspective. The precise mapping between her physical and virtual body movement creates the sense of embodiment body ownership illusion. By using Electrical Muscle Stimulation (EMS) technology, we create essential physical sensations to elicit strong body ownership illusion. Extending this methodology of embodied storytelling, a revised hyper-realistic version of Tree experience was created collaboratively with filmmakers Milica Zec and Winslow Porter and presented at the Sundance Film Festival in 2017. So far, over 200 people have experienced being a tree, and we will continue showcasing it in other venues including the TriBeCa Film Festival. (MIT Media Lab 2017, 48).

The quote gives some fascinating image theoretical insights into the concept of *TreeSense*, a media system that can be best described as a performative image medium with very specific degrees of freedom of human interaction, as a progressive input-output-relation. Therefore, the VR image is more a spatiotemporal scenario of a specific action and accessibility than a simple displaying format. It unfolds its *Virtual Pictoriality* by the action of the user and the phenomenological and semiotic status of the performative image is dependent from a sensory and perceptual synchronization of the physical (real body) and the *Virtual Body* (the tree as an *Avatar*).

This synchronization has to deliver a perceptual coherence of stimuli and a *homeostasis* of *Virtual Depictions*, actions, the user's bodily



response and cognitive processes of meaning and decoding of different image artefacts (passive and active VR environment, *Avatarial Tree*). This corporeal-driven dynamic transforms the image into an embodied image process: The image turns into an *Imago Corporalis* (embodied image) and the virtual-driven perception of being a tree gets linked with the physical-driven perception of being a human. Additionally, the *Imago Corporalis* induces a specific *quasi-materiality* of sensations between fact and fiction, because the *Electrical Muscle Stimulation* (EMS) only generates a feedback of simulated inputs (branches, a worm crawling, a bird is landing, chainsaw). So, the *Imago Corporalis* is directly depending on these simulated inputs that are for their part connected with the specific depictions (which are more and more perceived as *quasi-objects*). This is an innovative but also paradox situation within the reception process, but it has a high value for an image theory, because we have to ask if the image of a depicted object (like a crawling worm) is still an image when the recipient is able to receive a sensory feedback and gets the impression of an (quasi) real animal. At least, we surely know that the crawling worm cannot be real, but it gets a phenomenological or somesthetic impact on the body by a stimulus that reflexively transforms the image into a *quasi-image* and the depicted object into a *quasi-object* (Fig. 1.–3.).

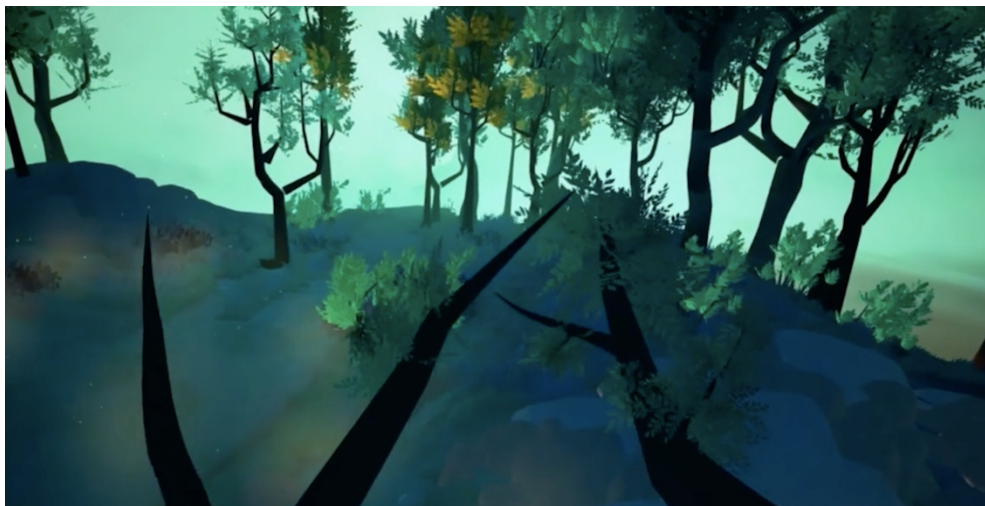


Fig. 1: The physical body is synchronized with a tree as an Avatarial Body. Screenshot from: <https://vimeo.com/210779777>



Fig. 2: The physical arms are getting tactile inputs by Electrical Muscle Stimulation for a homeostatic reception. Screenshot from: <https://vimeo.com/210779777>



Fig. 3: Caterpillar and bird as tactile induced quasi-objects or excitation patterns. Screenshot from: <https://vimeo.com/210779777>

As a key parameter for the analytical approach for describing the *Critical Zone* the *Imago Corporalis* has a fundamental potential: On the one hand, the functional structure can enable a synchronization of

nature and culture and on the other hand it could structure an image theoretical access to the abstract and symbolic concept of an endangered nature; based on the self-efficacy of the *quasi-materiality* of being a tree. The idea of a bodily or embodied image (*Imago Corporalis*) changes and challenges the image theoretical status of the pictorial representation and the perceptual status of the image reception at the same time. Following the arguments of Arènes, Latour and Gaillardet it seems to be plausible to understand the concept of an *Imago Corporalis* as one possible VR realization of the above mentioned anamorphosis: „a distortion of image made through an instrument or a change in perspective. Such anamorphosis allows us to shift from a planetary vision of sites located in the geographic grid, to a representation of events located in what we call a Gaia-graphic view”<sup>5</sup>.

### The Aesthetic Sign Relation of the Imago Corporalis

It is possible to argue for a specific sign relation that characterizes the perceptual process that is unfolding between *TreeSense* and the recipient.

The micro aesthetic<sup>6</sup> aspect of this process is based on the design decisions, technology as a fundamental basis and the specific materiality of the medium: This means, that the materiality is a physical construct that operates by specific signals. The material and phenomenological condition of the signals are influencing the transfer of information (with aspects of entropy and redundancy) and is closely connected with the sensory reality or the different sensory dynamics of perception. We could argue that two different levels of a medium are evident. At first, signals are physical entities that temporarily occur within a physical space with an own extension or temporal volume: space and time. At second, this temporal occurrence has to be

5 Arènes et al. 2018, 1.

6 See for a further clarification of the concepts Bense 1969, 42.

characterized by the specific substance of the signal, the signal form and intensity<sup>7</sup>.

The macro aesthetic aspect of this process is based on the fundamental sign realization of a specific meaning: This means, that the material presence of signals could develop a mode of representation that delivers specific sensory information leading to a so-called cognitive import<sup>8</sup> of the recipient (the interpretant, understanding, knowing, acting with an artefact and its specific function).

Micro aesthetics is focusing on the design selection of a specific repertoire on a material basis that is using physical signals. Macro aesthetics is focusing on the sign effect of the repertoire with regard to the generation of a specific meaning within the range of a functional use (fig. 4).

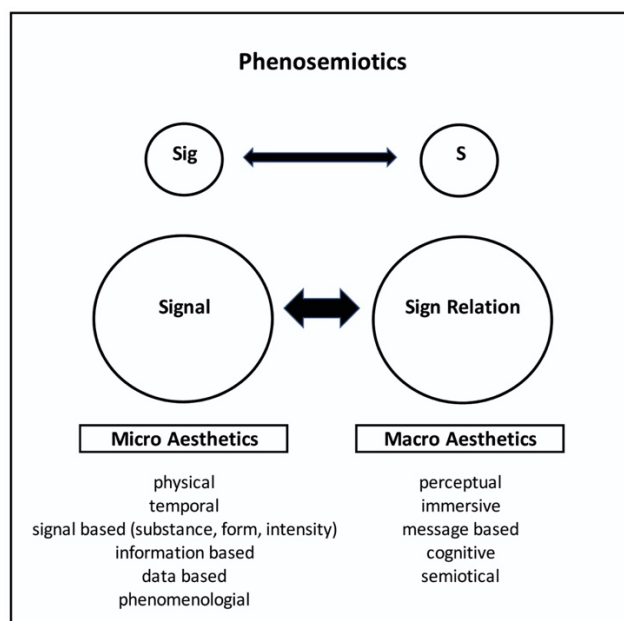


Fig. 4: The Relation of Micro- and Macroaesthetics in the framework of Phenosemiotics (by the author).

- 7 Substance, form and intensity are categories of a material aesthetics in the context of an information-based aesthetics (Bense 1969, 17).  
 8 See Elleström 2017.

The basic *micro-macro-aesthetic-relation* is consolidating a specific cybernetic state model with a focus on signals and signs:  $\text{sig} = f(x, y, z, t) \rightarrow s = f(m, o, i)$ <sup>9</sup>. We can describe this state model with the selection decisions within the design process that are creating a specific signal (sig). The signal is a physical entity within spatial coordinates (x, y, z) and a specific temporal extent (t). This level is the aspect of selectivity of aesthetic states. The macro aesthetic dimension of the *sign* effect (s) gets triggered by *sig* (signal) and integrates the semiotic differentiation of the materiality of the sign carrier (m), a mode of representational mediation of a specific *object* (o) and the cognitive stabilization of an *interpretant* (i). If we have a closer look on the materiality of a signal, we could additionally argue for an extended perspective for the analysis of the spatiality and temporality of a signal. The idea is to integrate the relation of *substance* (sub), *form* (for) and *intensity* (int) of a given physical signal structure<sup>10</sup>.

As an example, we could think of a specific sound event in an action movie: we can relate the sound event (a guitar riff of a rock song) to the materiality of the movie as a medium with the help of the sound system (x, y, z) of the TV and we understand that the sound event is connected to a specific scene (x, y, z). The sound event (t) has started with the beginning of the scene and has ended with the ending of the scene. We can recognize that the substance of the guitar riff is a sound event (sub) that has a specific *form* (for) with a dominant usage of the A minor chord and a dominant sound level (much louder than the audio track of voices and movements). This physical structure of the sound signal with regard to spatiality, temporality, *substance*, *form* and *intensity* is then triggering the sign relation on the macro aesthetic level, which means, that the recipient understands the hard guitar rock riff as a sign carrier (m) with a focus on its function within popular music culture as a dominant and masculine sound ritual (o) with a specific meaning that addresses the spe-

9 See Bense and Walther 1973, 98.

10 See Bense 1969.

cific pressure, burden and stress (i) of a character involved in an action scene. So, it is important to understand this complex order of materiality and sign relations as a *signal pan-relation* ( $\text{sig}_{\text{pr}}$ ):  $\text{sig}_{\text{pr}} = f(x, y, z, t) \subset f(\text{sub}, \text{for}, \text{int}) \rightarrow s = f(m, o, i)$ . The signal becomes a signal relation of spatial (x, y, z) and temporal (t) aspects that are consolidating a material structure in accordance with *substance* (sub), *form* (for) and a specific *intensity* (int). This complex relation is the material implication ( $\rightarrow$ ) for the higher order sign dynamics  $s = f(m, o, i)$ .

Within an analytical point of view, we could learn a lot from a *signal pan-relation* with regard to the *exteroceptive* sensory reality of a medium, because it is all about *substance*. If we have a texture of a wooden table surface, we can define a *haptic* (hap) substantial event, the game controller with force feedback is structuring a *tactile* (tac) substantial event, a painting in the museum presents a *visual* (vis) substantial event, a smell of perfume induces an *olfactory* (olf) substantial event and the taste of a glass of beer determines a *gustatory* (gust) substantial event. Additionally, we could understand the interoceptive sensory reality as an important aspect for the understanding of a medium. The physical movement of the user's body that is synchronized with a *Virtual Environment* structures a *proprioceptive* (prop) substantial event, the megadrone soundscape in a horror movie directly addresses the abdominal regions as a specific *visceroceptive* (visc) substantial event, playing an interactive sports game with a specific game console could raise body temperature as a *thermoceptive* (therm) substantial event and in some cases, with regard to a total immersive body addressing of *Virtual Reality* real-time shooter games, it is possible to receive pain stimuli as a *nociceptive* (noci) substantial event.<sup>11</sup>

11 "But perception is not just a matter of the classic five senses. Besides these five so-called exteroceptive senses seeing (visual), hearing (auditive), tasting (gustatory), smelling (olfactory) and touching (tactile/haptic), we also dispose of the senses of interoception: these are called proprioception, viscerosception, thermoception, and nociception. Proprioception contains the vestibular sense and the sense of the concept of kinesthesia which is also called the sense of movement. The latter has been proved as a sense which includes muscle nerves activities. Viscerception means the perception of internal organs like hearing the blood flow thru the veins, feeling one's heartbeat or sensing one's digestion. Thermoception is the sensing of heat and cold, and nociception means sensing

In the specific case of *Imago Corporalis* we have to understand that the *signal pan-relation*  $\text{sig}_{\text{pr}} = f(x, y, z, t) \subset f(\text{sub}, \text{for}, \text{int}) \rightarrow s = f(m, o, i)$  can be extended in a poly-modal perspective. A poly-modal extension can be referred to the sensory dynamic of the perceptual process, because every substantial event is a physical moment of human sensory perception:  $\text{sub}((\text{hap}, \text{tac}, \text{vis}, \text{aud}, \text{olf}, \text{gust}) \wedge (\text{prop}, \text{visc}, \text{therm}, \text{noci}))$ . The extension of the state model gives insights into the range of the specific design decisions of a medium that directly correlates with the impact on the sensory dynamics:  $\text{sig}_{\text{pr}} = f(x, y, z, t) \subset f(\text{sub}((\text{hap}, \text{tac}, \text{vis}, \text{aud}, \text{olf}, \text{gust}) \wedge (\text{prop}, \text{visc}, \text{therm}, \text{noci})), \text{for}, \text{int}) \rightarrow s = f(m, o, i)$ . Therefore, design decisions of an *Imago Corporalis* are activating at least two different substantial events, whereby the addressing of somesthetic sense modalities<sup>12</sup> is the crucial point (haptics, tactility, proprioception)<sup>13</sup>. It is important to recognize that this activation contains a double phenomenology: At first, the pure fact of a multimodal activation intensifies the media input, at second the activated sense modalities can influence and affect each other during the activation process. If we think of a regular image (for example a cactus with long spikes) displayed on a tablet computer, we have the structure of a *visual* (vis) substantial event. Are we looking (vis) at the same cactus with long spikes on a display that is able to use a force feedback mechanism for a *tactile* stimulus (tac), then we can additionally perceive the specific simulated texture of the cactus including physical (pseudo-realistic, *quasi-material*) information from roughness and bumps to sharp spikes (see for example the 3D Tactile Rendering of Disney Research). The cactus image as an *Imago Corporalis* is based on *visual* and *tactile* substantial events and becomes a specific *quasi-object*. Additionally, we can find a cross- or multimodal phenomenology, because the *tactile* stimulus transforms the image representation into an *excitation pattern*, an extended mode

pain (the latter are very closely attached to the haptic sense of touch)" (Gsöllpointner 2015, 112).

12 See Franzén, Johansson, and Terenius 1996.

13 See Paterson 2007.

of the perceptibility of the image. In this extended mode, we can assume that the realism effect gets enhanced by the somesthetic enhancement; based on the double substantial event activation.

### Avatar: The Image and the Illusion of the Body

The image as a physical event has local coordinates and in the case of Virtual Reality a specific temporal dimension. We can understand the temporal dimension as mode of performance, because the image of an embodied tree in *TreeSense* has to be synchronized with the real arm and body movements of the recipient. So, the embodied tree is first of all a visual (vis) substantial event that is additionally synchronized with tactile (tac) substantial events based on Electrical Muscle Stimulation. This specific substance (sub) is correlated with the somesthetic enhancement effect and we have to ask for the specific structure of the form (for). In this context, the form is the specific structure of a perceptible phenomenon based on sensory information.

The key question for *TreeSense* is how we could describe the core aspects of the perceptible *Virtual Reality* shape of a tree as a performance? We know that the *visual* and *tactile* substantial events are the sensory fundament of the materiality of the *Virtual Tree*. Now, we have to look at the main *form* (for) elements that are structuring the tree experience: The cartoon style is an abstract form of representation in a non-photorealistic manner, but the *Virtual Environment* has colors and realistic wind animation and animated elements like a moving bird or caterpillar. Additionally, a light simulation with light rays, shadows and particle light reflections in the environment is contributing to the diegetic pseudo-realism. The image has two internal levels and structures of *form* (for), so we can differentiate a *figure-ground representation* with the *figure* of the tree as an *Avatar* and the environment as *ground*. So, within the performance of the tree as a *Virtual Image* it is important that the user understands this *figure-ground representation* within two epistemic categories or co-perspectives. The *ground* of the environment has to be a logical category of *not-me* and the tree as an *Avatar* has to be realized as the logical category *it-is-me*.



In a classical image theory, we have images like paintings, photographs and movies in cinema and it was the standard to categorize them in a specific distance to the recipient. With the concept of *Imago Corporalis* this standard is changing towards a decidedly proximal relation of image and body. The *Avatar* as a proximal (*it-is-me*) image construct (for) could be described as an embodied *excitation pattern* that is structured by the somesthetic enhancement of double substantial event activation (sub) and multiplies the *own-body-perception* as an effect of the image *intensity* (int). So, the *Avatar* in the *Imago Corporalis*-condition is not only a simple image representation, but more a visual trigger for a full *body ownership illusion* (int). We can argue, that this *body ownership illusion* experienced in a first-person perspective “is described as the feeling of owning an artificial body, which substitutes the real body as the origin of perceptual sensations”<sup>14</sup>. A visual key function for the coherent realization of a *body ownership illusion* is the first-person perspective (1PP), which means a visual bodily overlay of the experienced spatial location of the physical body and the visualized *Avatar* in the *Virtual Reality*. It is very fascinating that the 1PP was also known in the arts for centuries and productively developed in movie culture: “Seeing the virtual body from the first person perspective is already a cue to the brain that it is the person’s actual body, thus providing an illusion towards this effect. The illusion is enhanced if further multisensory feedback is applied”<sup>15</sup>. Important is the hypotheses, that the *body ownership illusion* could already be stimulated by the 1PP as a *visual* substantial event, whereby the enhancement of this illusion is dependent from additional sensory activation based on multisensory feedback. We have already seen that the specific design decisions of an *Imago Corporalis* should activate at least two different substantial events with a focus on somesthetic sense modalities (haptics, tactility, proprioception): “In this multisensory framework. The integration of temporally, and spatially congruent

14 Maselli and Slater 2013, 2.

15 Slater 2017, 21.

visual, tactile, and proprioceptive signals generates a perceptually coherent percept of one's own body"<sup>16</sup>.

The tree in *TreeSense* becomes an Avatarial Body for the recipient – and based on sensory stimuli – the representation of the tree itself is structuring the higher order sign process of understanding.

### The Virtual Tree as a Sign Process

We have already seen that the micro-macro-aesthetic-relation is consolidating a specific cybernetic state model with a focus on signals and signs:  $\text{sig} = f(x, y, z, t) \rightarrow s = f(m, o, i)$ . The signal-based aspects have been analyzed with a focus on substance and form and we have seen that the specific intensity of the signal is connected with the *body ownership illusion*. Now, it is important to have a closer look on the higher order sign relation that is structured by the function of materiality, object and interpretant:  $s = f(m, o, i)$ . With a secondary reference to the semiotics of Charles S. Peirce and a primary reference to the Peirce reception by Max Bense and Elisabeth Walther (the so-called Stuttgart School of Semiotics) it is important to analyze the different levels<sup>17</sup> of the sign process of the tree. At this point, the semiotic concepts will be used in an explicitly methodological way. Also, the semiotic reference will not be used as a criticism of semiotics or as a mere historical reflection of semiotic perspectives.

The structure of *materiality* (m) can be differentiated by the aspects *qualisign*, *sinsign* and *legisign*. The *qualisign* is a quality or possibility that is embodied by the sign and implies a specific feeling or sensation (the abstract feeling of being a tree, the emotional reaction to the specific form of the leaves, branches or colors of the tree). A *sinsign* is a singular or unique sign as a distinguishable sign identity (the concept *TreeSense*, the bird, a leaf, a light ray). The *legisign* is a specific rule or law that is implemented in a sign and enables a repetition or reproduction (the 1PP with *avatarial-body-overlay* as a rule and basic

16 Petkova, Khoshnevis and Ehrsson 2011, 5.

17 See Bense and Walther 1973.

condition for the *body ownership illusion*, the movement of the physical head influences the levels of representation in the context of figure and ground).

The structure of the semiotic *object* (o) can be differentiated by the aspect's *icon*, *index* and *symbol*. The *icon* is a reference to a specific object based on similarity (the recognition of pictorial properties like shadows, wind, light rays, the tree representation). The *index* is structuring an indicative or causal relation to the object (the movement of the *Avatarial Tree* branches are dependent from the arm movement of the user of *TreeSense*, the light rays are related to the simulated sun, the flying leaves and artefacts are related to the simulated wind). The *symbol* is a reference to an object that is based on specific conventions and learned facts (the convention that the tree becomes the user's body, that *TreeSense* is not only dealing with the idea of *becoming-a-tree*, it is about a sensitization of ecological global issues).

The structure of the *interpretant* (i) can be differentiated by the aspects *rheme*, *dicisign* and *argument*. The *rheme* is a single sign that indicates a given thing without the possibility of judging it as true or false; as a pure possibility of a concept (in the VR environment as the ground of *TreeSense* we see a lot of pictorial *icons* as single signs without a factual reference). The *dicisign* is a factual interdependence of a sign and an object that can be judged as an existing relation (the performative interaction of the physical body and the tree representation is a factual interdependency, the tree as a figure is highlighting an epistemic difference of figure and ground). The *argument* is based on a symbolic convention as a law or habit that is structuring a context-sensitive plausibility and logical significance (the *homeostasis* of the physicality and the tree representation becomes a performative activity; the effect is a body ownership illusion and an experienced symbolism that connects *TreeSense* with ecological global issues).

With regard to the already mentioned *Peirce-Bense-Walther-approach* of semiotics it is very useful to analyze the *figure-ground representation*

of *TreeSense* in accordance with the ten sign classes (the following list is quoted after Schelske<sup>18</sup>):

1. rhematic-iconic qualisign
2. rhematic-iconic sinsign
3. rhematic-iconic legisign
4. rhematic-indexical sinsign
5. rhematic-indexical legisign
6. rhematic-symbolic legisign
7. dicentric-indexical sinsign
8. dicentric-indexical legisign
9. dicentric-symbolic legisign
10. argument-symbolic legisign

The representation of the environment as ground in *TreeSense* has two specific dimensions: At first, the depiction of the passive environment, like tree trunks, the soil or a mountain representation, could be described as a *rhematic-iconic sinsign*, because the singular image representation is created by iconicity and induces a specific feeling with an open interpretation. At second, the active environment, like atmospheric particles, moving leaves and branches, a crawling caterpillar, a flying and landing bird, and the moving chainsaw, could be described as *dicentric-indexical sinsigns*, because the singular image representation is synchronized with an indexical effect and the interpretation of this active status is connected with the causal assumption that the movement or activity is triggered by cause.

If we have a look at the *Avatarial Tree* the semiotic relation is much more complex compared to the ground aspects of the VR environment. The full homeostatic reception of the tree could be described

18 See Schelske 1997, 54.

as an *argument-symbolic legisign*, because the 1PP-law and the multisensory somesthetic inputs are the fundament for the *body ownership illusion* with a focus on a symbolic structuring of the physical and *Avatarial Body* (*it-is-me*); with an effect on context-sensitive plausibility and logical significance of the whole *TreeSense*-scenario. Notwithstanding, it seems to be plausible that the performative aspect of the *Avatarial Tree* is based on a temporal extension of different levels of performance that are implying different levels of the sign relation (as a gradual improvement of the sign relation). This extension implies the necessity to refer at least to two more sign structures to categorize the processual dynamic of the *Avatarial Embodiment* in the context of the *legisign*. At first, when the 1PP-law and the multisensory somesthetic inputs are creating the user's early experience of being a tree the specific actions of the recipient have to be mentally and causally synchronized between the physical and *Virtual Body*; with the causal assumption that the movement is triggered by the user himself: This category is the *dicentic-indexical legisign*, as a causal start of the whole law-driven and factual process. At second, when the user's causal synchronization between the physical and *Virtual Body* is working, the user will accept the embodied tree as the effect of a factual *body ownership illusion* that directly addresses a symbolic reference to global ecological issues: This category is the *dicentic-symbolic legisign*, as a symbolic transition from the factual causality to a reference of a higher order of meaning.

The performative and temporal extent of the tree reception as an *Avatarial Body* can be understand as a specific process of sign realization; a temporal development from a low level to a high level of semiotization with at least three different structural sign levels (1.–3.) (fig. 5).

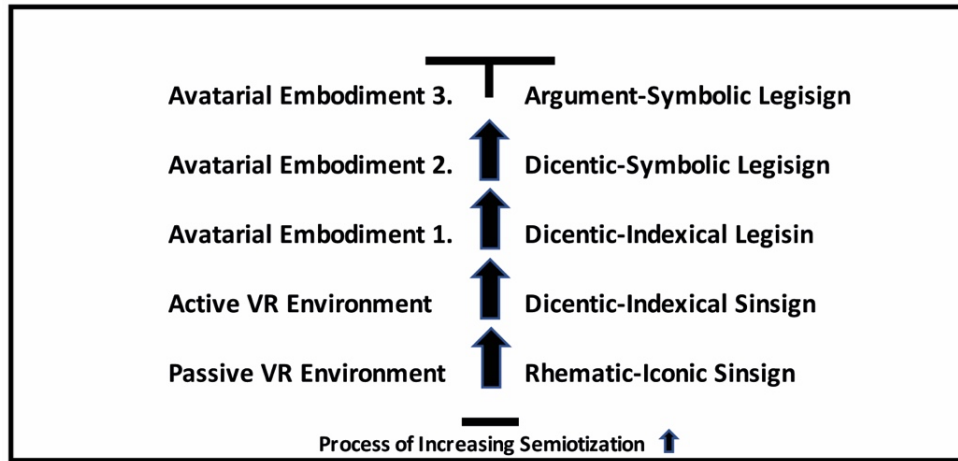


Fig. 5: The increasing level of semiotization including three structural levels of the Avatariar Body (by the author).

### Conclusion

*TreeSense* is a prototype that addresses a variety of image theoretical questions with a focus on the phenomenology and semiotics of representations in *Virtual Reality*. It is plausible to argue for a necessary shift within the analytical frameworks of image theory because the classical image structure gets transformed into a poly-medial and poly-sensual artefact by modern media technology. This somesthetic transformation has an impact on the sensory experience of the image phenomenon and on the quantity and quality of information values – from a low to a high semiotization – as mental decoding of different sign levels:  $\text{sig}_{\text{pr}} \rightarrow \text{s}$ .

Therefore, it is important to understand the complex physical – let us precisely categorize this as phenosemiotic<sup>19</sup> – dynamics of media materiality with spatial and temporal aspects and the characteristics of the sensory *substance*, the specific *form* and the impact of *intensity* within the performative reception.

The understanding of the signal-based materiality gives complex insights into the complexity of a medium as a sign vehicle and its

19 See Grabbe 2018 and 2019.

cognitive effects; and the different processual interactions of the recipient with the specific representational areas that are involved in the mediatization process. Therefore, the phenosemiotic approach applied to *TreeSense* is an analytical methodology that correlates effectively the micro- and the macroaesthetic aspects of a medium with a further analytical reference to the sensory inputs and the perceptual reality of the recipient. The outcome of this approach has the potential to structure the phenomenal reality of a medium as a spatiotemporal artefact with *substance*, *form* and *intensity* to connect these findings with the sign-based processes of a semiotization; that are initiated by the medium.

Finally, it was shown that the structure and concept of a *Virtual Reality* medium is directly connected with its performance, and the consequence is an intensification of the dynamic media process. This intensification shifts the analytical clarity from static media to dynamic media. The new focus lies on the clarification of the possibilities and problems of analyzing a medium under the material and cognitive conditions of a temporal process and different levels of semiotization. It seems to be very important that a systematic media and image theory has to develop specific analytical tools and methodologies to productively relate the phenomenal status of a medium, with the different levels of semiotization<sup>20</sup> in the context of physicality and the sensory and perceptual conditions of media reception.

20 For the concept of different levels of semiotization see Walther 1979, 81.

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## **Critical Zones. Ein Forschungsseminar mit Bruno Latour**

Daniel Irrgang, Martin Guinard-Terrin, Bettina Korintenberg

„Alles muss aufs Neue kartografiert werden“, fordert Bruno Latour in seinem unlängst erschienenem *Terrestrischen Manifest*.<sup>1</sup> Die französische Originalausgabe erschien 2017 bei Éditions La Découverte, Paris, unter dem Titel *Où atterrir? Comment s'orienter en politique*. Wesentlich besser noch als die deutsche Variante benennt dieser Titel die Leitfrage nicht nur des Essays, sondern auch die des Forschungsseminars, welches Latour zurzeit an der Staatlichen Hochschule für Gestaltung (HfG) Karlsruhe gibt: „wo landen?“, „wie orientieren?“<sup>2</sup>

Zwischen Januar 2018 und November 2019 entwickelte der französische Philosoph und Soziologe Bruno Latour als Gastprofessor an der HfG Karlsruhe experimentell eine imaginäre Kartografie, vermittels derer eine Orientierung gelingen mag in jenen zerrissenen Verhältnissen in Gesellschaft, Politik und Ökologie, die er als Neues Klimaregime<sup>3</sup> bezeichnet hat. Klima wird in diesem erweiterten Sinne allgemein verstanden als die „Beziehungen der Menschen zu ihren materiellen Lebensbedingungen“<sup>4</sup>. In sechs einwöchigen Blockseminaren bereitete Latour zusammen mit Studierenden und Postgraduierten der Hochschule aus Theorie, Gestaltung und den Künsten sowie Forscherinnen und Forschern, Künstlerinnen und Künstlern aus

1 Latour 2018, 43.

2 Dieser Aufsatz wurde zuerst veröffentlicht in *Revue d'Allemagne et des pays de langue allemande* 50.2, 2018, 297–308, und erscheint hier mit leichten Veränderungen.

3 Latour 2017.

4 Latour 2018, 9.

verschiedenen Teilen der Welt<sup>5</sup> konzeptionell eine Ausstellung vor, die am 23. Mai 2020 am ZKM | Zentrum für Kunst und Medien Karlsruhe ihre Türe geöffnet hat. In den Wochen zwischen den einzelnen Blockveranstaltungen arbeiteten die Teilnehmerinnen und Teilnehmer einzeln oder in Gruppen an Forschungsprojekten, die zur Konzeption der Ausstellung beigetragen oder konkrete Arbeiten für sie entwickelt haben. Ergänzt werden die Positionen im Seminar durch Gäste, etwa aus den Geowissenschaften oder den Künsten. So nahm an der Sitzung im Mai 2018 der renommierte Foto- und Filmkünstler Armin Linke teil, der nicht nur Ausschnitte aus seinen aktuellen Dokumentarfilmprojekten mit Bezug zum Thema des Seminars vorstellte, sondern die Teilnehmerinnen und Teilnehmer auch dazu eingeladen hat, mit der großen Menge an Filmmaterial, die sein umfangreiches Archiv darstellt, zu arbeiten und thematische Verbindungen zu ihren individuellen Forschungsinteressen herzustellen. Armin Linke hat zudem die zweite Seminarsitzung fotografisch festgehalten – wir danken ihm für die freundliche Erlaubnis, hier zwei dieser Fotos abdrucken zu dürfen.

Die Konstellation einer Gastprofessur, die Studierende der HfG sowie weitere Beteiligte in ein Forschungs- und Ausstellungsprojekt am ZKM mit einbezieht, folgt der Strategie einer engeren Kooperation beider Häuser, wie sie zwischen den beiden Schwesterinstitutionen in ihren Gründungsjahren angelegt und gelebt wurde.<sup>6</sup>

5 Die 28 Teilnehmerinnen und Teilnehmer stammen unter anderem aus Deutschland, Frankreich, Japan, Südkorea, Türkei und den USA. Die Autorin und die Autoren dieses Textes zählen ebenfalls zu den Teilnehmerinnen und Teilnehmern und haben als Koordinator des Seminars für die HfG (Daniel Irrgang), Co-Kurator (Martin Guinard-Terrin) und Co-Kuratorin der Ausstellung, kuratorisches Team ZKM | Karlsruhe (Bettina Korintenberg), weitere Einblicke in das Gesamtprojekt.

6 Unter dem Gründungsdirektor Heinrich Klotz, der damals noch *beiden* Institutionen in Personalunion vorstand, war Forschung, Lehre und Ausstellungsbetrieb von ZKM und HfG Karlsruhe als verschränktes System gedacht. „Auf diese Weise wird die künstlerische Selbstkontrolle an der vorderen Linie der Medienentwicklung und der Erschließung der Medienkünste unterstützt.“ (Klotz 1995, 28) Selbstredend fanden Kooperationen zwischen beiden Häusern auch in den letzten Jahren statt; die Institutionalisierung von Kooperationsmöglichkeiten – wie etwa über solche Gastprofessuren und Ausstellungsprojekte – soll diese Komplementarität als großen Vorteil für beide Häuser jedoch noch stärker ausbauen.



Präsentation von Ergebnissen einer Gruppenarbeit im Rahmen der zweiten Sitzung des Forschungsseminars im Mai 2018 an der HfG Karlsruhe. Foto: Armin Linke.

Als Modellprojekt diente die Entwicklung einer Ausstellung zum Leben und Wirken des mallorquinisch-katalanischen Gelehrten und Mystikers Ramon Llull. Amador Vega Esquerra, Professor für Ästhetik an der Universität Pompeu Fabra in Barcelona, bereitete im Wintersemester 2016/17 als Gastprofessor an der HfG die forschungsintensive Ausstellung zusammen mit Studierenden und Beteiligten beider Häuser vor. „DIA-LOGOS. Ramon Llull und die Kunst des Kombinierens“ war vom 17. März bis 5. August 2018 am ZKM zu sehen und wurde kuratiert von Amador Vega Esquerra, Peter Weibel und Siegfried Zielinski, in Zusammenarbeit mit Bettina Korintenberg und Daniel Irrgang.

Einem ähnlichen Modell folgt das aktuelle Ausstellungsprojekt, kuratiert von Bruno Latour, Peter Weibel, Martin Guinard-Terrin und Bettina Korintenberg: „Critical Zones“ kartografiert die Merk-

male des Neuen Klimaregimes und setzt die Ausstellungsbesucherinnen und -besucher mit den veränderten „terrestrischen“ Bedingungen in Beziehung – Bedingungen, in denen wir zu leben erst noch lernen müssen.<sup>7</sup> Latours Arbeiten zum Neuen Klimaregime stehen in direkter Beziehung mit jener „Anthropologie der Modernen“<sup>8</sup>, die sich nicht nur in seinen Veröffentlichung der letzten Jahrzehnte herausgebildet hat.<sup>9</sup> Auch basieren sie auf Ausstellungsprojekten, die Latour in den letzten 20 Jahren in Kooperation mit dem ZKM entwickelt hat und die er und Peter Weibel, analog zum Begriff des Gedankenexperiments, als „Gedankenausstellungen“ bezeichnen: „Iconoclash“ (2002), „Making Things Public“ (2005) und „Reset Modernity!“ (2016). Ausstellungen also, die „die Erfahrung des Denkens und das Voranschreiten in einer bestimmten Form des Denkens“<sup>10</sup> mit der Erlebniswelt der Besucherinnen und Besucher konfrontieren. Als Ergebnis der Zusammenarbeit von Künstlerinnen und Künstlern, Wissenschaftlerinnen und Wissenschaftlern, Gestalterinnen und Gestaltern sowie Aktivistinnen und Aktivisten zeigen diese Gedankenausstellungen Brüche in jener Welt an, die wir als Moderne zu bezeichnen gelernt haben. Die künstliche Welt des Ausstellungsraums erlaubt es, mit den Krisen, die sich in diesen Brüchen zeigen, aber auch mit ihren Möglichkeiten, experimentell und ausprobierend umzugehen. Hierbei kann sich ein testendes, spielerisches Verhältnis zu den neuen Bedingungen artikulieren, wie es in der Welt „da draußen“ so nicht möglich wäre.

Doch zurück zu „Critical Zones“ und den Anliegen dieses Forschungs- und Ausstellungsprojekts. Der Begriff *critical zone* stammt aus den Geowissenschaften und der Biologie, wo er verwendet wird, um die dünne „Haut“ des Planeten Erde zu bezeichnen, seine Oberfläche, wenige Kilometer dick, auf der sich Leben so wie wir es ken-

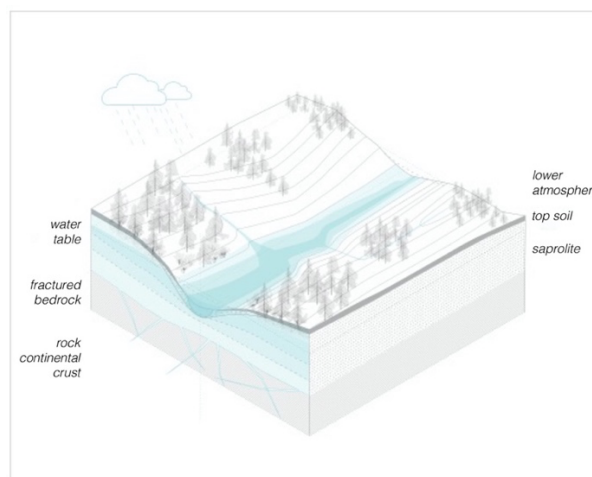
7 Vgl. Latour 2017, 32–33.

8 Latour 2017, 15.

9 Besonders hervorzuheben sind hier *Wir sind nie modern gewesen. Versuch einer symmetrischen Anthropologie* (Latour 2008) und *Existenzweisen. Eine Anthropologie der Modernen* (Latour 2014).

10 Latour und Jocks 2015, 242.

nen entwickelt hat und dort – und das ist zentral – die eigenen Bedingungen für sein Überleben *hergestellt* hat.<sup>11</sup> Diese Oberfläche ist fragil, angreifbar – kritisch –, aber somit auch hochgradig reaktionsfähig. Hier zeigt sich das mehrdeutige Potenzial des Begriffs *critical zone*, wie Latour ihn versteht: Er bezeichnet eine Perspektive auf die Biosphäre, die auf (menschliches) Einwirken höchst sensibel reagiert, die aber auch den Menschen als Teil und Bedingung in sich trägt.



Typische Visualisierung der critical zone in den Geowissenschaften<sup>12</sup>

Der alte Dualismus Kultur und Natur, das Einwirken des Menschen auf die Natur aus einer Stellung des Äußeren, wird aufgehoben zugunsten eines heterogenen Zusammenwirkens von Lebewesen und ihren geochemischen Bedingungen zu einem responsiven, sich selbst generierenden Zusammenhang, in den auch der Mensch als Teil eingebettet ist. Dies hat, folgt man Latour, philosophische Implikationen: Natur erscheint hier nicht als System, dessen ökologische Desaster es dadurch zu begegnen gilt, Elemente von Kultur möglichst verträglich zu integrieren. Solch eine Sichtweise, die jene der Moderne ist, impliziert eine mechanische, mitunter kybernetische Position, in der ein omnipräsenter „Ingenieur“ einen Überblick

<sup>11</sup> Vgl. Brantley u. a. 2017.

<sup>12</sup> Abb. aus Arénes, Latour und Gaillardet 2018.

über dieses System einnehmen kann, um dessen vielfältige Bestandteile zu einem Ganzen zu integrieren.<sup>13</sup> Die Perspektive der *critical zone* hingegen ist keine konstruierte von außerhalb, keine einer abstrakten „Natur“, die es distanziert zu beschreiben gilt. Sie sieht den eigenen Standpunkt vielmehr als eingebettet, eingefaltet in eine Umwelt vielfältiger dynamischer Prozesse.<sup>14</sup> In der Entwicklung einer solchen Perspektive, die geochemische, geophysische sowie evolutionsbiologische Prozesse in den Fokus nimmt, spielen für Latour die (in den Fachdiskursen nicht unumstrittenen) Pionierleistungen von Lynn Margulis und James Lovelock eine zentrale Rolle.<sup>15</sup> Letzterer resp. sein Gaia-Konzept<sup>16</sup> ist ein wichtiger Bezugspunkt sowohl für Latours Buch *Kampf um Gaia* als auch für unser Forschungsseminar. Die Konferenz „Next Society – Facing Gaia“, die im April 2016 im Rahmen der Ausstellung „Reset Modernity!“ am ZKM stattfand und die die kritischen Bedingungen des Planeten Erde und die Frage, wie wir dort in Zukunft leben möchten, in den Blick nahm, kann als Auftakt des Critical Zones-Projekts verstanden werden.

Die Frage, die sich nun stellt, ist, wie uns solch eine neue Sicht auf unsere Welt helfen kann, in einer Zeit globaler (sozialer, politischer, ökonomischer, ökologischer) Krisen ein neues Verhältnis zu ihr zu entwickeln; eines, das nicht mehr jenes abstrakte, distanzierte Verhältnis der Modernen ist, welches sich im Natur-Kultur-Dualismus zeigt. In *Das terrestrische Manifest* kartografiert Latour diese Krisen und projiziert einen neuen Vektor für einen möglichen Weg in die Zukunft.<sup>17</sup> Folgt man seiner Gegenwartsanalyse (wir fassen sie hier nur skizzenhaft zusammen), so hat der Vektor der Moderne – die Globalisierung als Operator des Fortschrittsnarrativs – ausgedient. Der Vektor als ein in die Zukunft offener Kurs ist zu einem definitiven Endpunkt geworden: Der Planet der Zukunft wird das Wachs-

13 Latour 2014b, 5.

14 Ebd.

15 Vgl. zu diesen Pionierleistungen Clarke 2012.

16 Vgl. u. a. Lovelock 2000.

17 Vgl. hierzu auch Latour 2018b.

tum der Summe seiner Nationen sowohl kapazitär als auch ökologisch nicht mehr tragen können. Der Kurs nach vorn, Richtung Globalisierung, der dennoch im Schwung der Moderne noch immer vorangetrieben wird, ist *un-realistisch* geworden. Aber auch der Kurs zurück, in Richtung des Lokalen, der sich als eine Rückkehr zu Werten wie Heimat, Boden und Tradition gibt und Symptome wie Brexit und US-Präsident Trump generiert hat, ist in den globalisierten Zusammenhängen nicht mehr zukunftsfähig. Was Latour fordert ist stattdessen ein Schritt „seitwärts“, in Richtung des „Terrestrischen“ – die Erde, auf der wir leben, weder als „globalisierten Globus“ verstanden, noch als Akkumulation von Territorien ihrer Nationalstaaten. Sondern als jenen interdependenten, sich selbst generierenden Zusammenhang, wie er oben in der Perspektive der Critical Zones beschrieben wurde: „Das Terrestrische stellt nicht länger allein den Rahmen menschlichen Handelns dar, es ist vielmehr *Teil davon*. Der Raum ist nicht mehr der mit ihrem Raster aus Längen- und Breitengraden erfasste der Kartografie, sondern ist zu einer bewegten Geschichte geworden, in der wir selbst nur Beteiligte unter anderen sind, die auf Reaktionen anderer reagieren.“<sup>18</sup> Die Aufgabe des Forschungsseminars ist es, diesen Möglichkeitsraum des Terrestrischen beschreibbar und schließlich als Ausstellung erfahrbar zu machen.

Das Forschungsseminar hat sich dieser Aufgabe gestellt.<sup>19</sup> Das interdisziplinäre Seminar, in dem sich Präsentationen Bruno Latours und der Beteiligten mit Diskussions- und Workshopformaten abwechselten, war ein Versuch, sich den vielfältigen Implikationen der Critical Zones bzw. des Terrestrischen aus verschiedensten Perspektiven zu nähern, als ein Oszillieren zwischen Wissenschaften, Künsten und Politik.

Ähnliche Seminar-/Workshopformate im Kontext von Denkaustellungen wurden von Bruno Latour bereits erfolgreich durchge-

18 Latour 2018, 53.

19 Die folgende Beschreibung des Seminarprinzips orientiert sich an einem internen Konzeptpapier Bruno Latours sowie an den Erfahrungen der Autorin und der Autoren als Teilnehmer am Seminar.



führt, etwa in Shanghai im Kontext der Ausstellung „Reset Modernity!“ im April 2016, einer Einladung von Hans Ulrich Obrist und Yangwoo Lee folgend. Eine weitere Workshopreihe, die die Implikationen von „Reset Modernity!“ und „Critical Zones“ zusammenführt, fand vom 26. bis 29. April 2019 in Teheran statt, organisiert von Martin Guinard-Terrin und Reza Haeri an der Pejman Foundation, in Kooperation mit der Universität Teheran und dem ZKM. Die „Iran perspective“ nimmt noch sensibler als das Seminar in Karlsruhe die postkolonialen Implikationen einer Gegenwartsanalyse in Hinblick auf die Brüche mit der (europäischen) Moderne in den Fokus. In den Workshops stellten Künstlerinnen und Künstler, Geografinnen und Geografen, Geologinnen und Geologen sowie Soziologinnen und Soziologen in Vorträgen Projekte vor, die in intensiven Diskussionsformaten analysiert wurden.

Das Seminar an der HfG Karlsruhe verfolgt eine etwas andere, stärker didaktische Herangehensweise. Es ist in Blöcken zu je fünf Tagen organisiert; die erste Sitzung fand im Februar 2018 statt, abgeschlossen wurde das Seminar mit der sechsten Sitzung im November 2019. Thematisch war es in drei Stränge strukturiert:

1. „Die Wissenschaft der Critical Zones“ – mit Unterstützung von Wissenschaftlerinnen und Wissenschaftlern aus den Geowissenschaften, die an politischen und künstlerischen Fragen interessiert sind, vor allem aus den sogenannten Long Term Ecological Research (LTER)- und Long Term Socio-economic and Ecosystem Research (LTSER)-Netzwerken in Frankreich und Deutschland. Jérôme Gaillardet, Geophysiker am französischen Institut de physique du globe ist hier der wichtigste Partner und Berater.
2. „Die Kunst der Critical Zones“ – anhand der Werke von und durch die Zusammenarbeit mit Künstlerinnen und Künstlern, die Praktiken verwenden, welche Bruno Latour als „material

turn in the arts“ beschreibt. Hier bestanden bereits Kollaborationen unter anderem mit Tomás Saraceno, Joana Hadjithomas & Khalil Joreige, Sophie Ristelhueber und Adam Lowe.

3. „Die Sozial- und Politikwissenschaften der Critical Zones“ – womit solche Positionen gemeint sind, die bereit sind, über Vorstellungen des Globalen hinauszugehen und über Alternativen nachzudenken (unter anderem Perspektiven mit Verbindungen zur Philosophie und Geographie).

Die Seminarteilnehmerinnen und -teilnehmer näherten sich interdisziplinär der Herausforderung, das vermittels des Begriffs Critical Zones aufgespannte Diskursfeld nicht nur forschend zu erkunden, sondern die dabei entwickelten Ideen auch in den Erfahrungsraum einer Ausstellung zu übertragen, in dem nicht nur der *logos*, sondern auch Ästhetik, Affekt, räumliche Beziehung und soziale Interaktion eine Rolle spielen. Das Ziel war es, für die Perspektive des Terrestrischen Repräsentationen und Narrationen zu finden, die einen Zugang der Ausstellungsbesucherinnen und -besucher ermöglichen. (Solche existieren noch nicht, im Gegensatz zu den vielen machtvollen Repräsentationen und Narrationen des Globalen und Lokalen.)

Eine der Methoden, die hierfür im Seminar angewendet wurden, ist das Versetzen der Teilnehmerinnen und Teilnehmer in imaginäre Situationen, die Merkmale von Gedankenexperimenten tragen. Solch ein Experiment, auf das die Teilnehmer im Verlauf des Seminars immer wieder zurückkommen, fand in der ersten Sitzung statt:<sup>20</sup> Angenommen wir leben um 1610 und erfahren von den revolutionären Entdeckungen Galileo Galileis. Nun ist man vor die Herausforderung gestellt, die dadurch hereinbrechenden grundlegenden Veränderungen für die Kosmologie und Gesellschaft dieser Zeit zu erkennen und zu verarbeiten. Als Ausgangspunkt bzw. Denkmaterial

20 Die folgende Beschreibung basiert auf einem Konzeptpapier Bruno Latours (Februar 2018).

diente uns Bertolt Brechts episches Theaterstück *Leben des Galilei* (uraufgeführt 1943). Das Gedankenexperiment unternimmt sodann eine Zeitreise: Angenommen wir befinden uns wieder im Jahr 2018 und sind mit ähnlich grundlegenden Umbrüchen in Kosmologie und Gesellschaft konfrontiert, wie wir sie mit der neuen Perspektive des Terrestrischen assoziieren. Wie würde man mit vergleichbaren epistemischen Strategien mit diesen Umwälzungen fertig werden? Um die Parallele zwischen 1610 und 2018 greifbarer zu machen, ersetzen wir Galileo Galilei mit James Lovelock und seiner „Entdeckung“ des Planeten Erde als responsive Quasi-Lebensform, die er mit der Denkfigur Gaia zu fassen versucht. Die Attraktivität, solche (bewusst historisierenden) Parallelen aufzustellen und zu analysieren, besteht darin, mit Mitteln der Wissenschaftsgeschichte, Kunstgeschichte, Philosophie, Kartografie, der Künste usw. die Merkmale beider epistemischer Brüche zu identifizieren und die Seminarteilnehmerinnen und -teilnehmer auf die Parallelen zwischen diesen beiden historischen Ereignissen (denn als solches bezeichneten wir auch, mit Latour, Lovelocks Entdeckung) in eigener Denkarbeit aufmerksam zu machen. Neben den Parallelen interessierten uns aber auch die Unterschiede, nämlich der bereits erwähnte Mangel an adäquaten Repräsentationen des Neuen Klimaregimes, die dessen Implikationen den Menschen näherbringen könnten. Folgt man Latour, so herrschte in der wissenschaftlichen Revolution des 17. Jahrhunderts eine wesentlich stärkere *Kontinuität* in den Repräsentationen und Narrationen des Kosmos vor und nach Galilei: „No sooner had the Copernican system been proposed, images of the Sun King began to appear in Versailles...“<sup>21</sup> Für die Umbrüche, die wir mit dem Neuen Klimaregime und der Critical Zones-Perspektive zu analysieren versuchten, sieht die Situation völlig anders aus. Diese neue „Kosmologie“ wird keinesfalls ohne Weiteres akzeptiert, wie uns etwa die immer lauter werdenden Stimmen der *climate change denier* zeigen, mit dem früheren US-Präsidenten als ihren Advokaten. Gehen wir jedoch davon aus, dass es sich bei dem Neuen Klimaregime um eine

21 Ebd.

mindestens genauso signifikante Revolution wie jene im 17. Jahrhundert handelt, wird der Bedarf an adäquaten Repräsentationen und Narrationen zentral. Hierin liegt die Motivation Bruno Latours begründet, zusammen mit jungen Künstlerinnen und Künstlern, Wissenschaftlerinnen und Wissenschaftlern, Aktivistinnen und Aktivisten im geschützten Raum eines experimentellen Forschungsseminars die Potentiale der Critical Zones zu erkunden. „Such a collaboration is indispensable to generate another landscape where it is possible to give another orientation for political involvement.“<sup>22</sup>



Gruppenarbeit im Rahmen der zweiten Sitzung des Forschungsseminars im Mai 2018 an der HfG Karlsruhe. Foto: Armin Linke

Als Artikulation für die im Forschungsseminar durchgeführten kollektiven Gedankenexperimente haben sich die Methoden des Reenactments und Rollenspiels bewährt. So wurden etwa die Protagonistinnen und Protagonisten von Brechts „Leben des Galilei“ in die Zukunft transportiert und der Hauptdarsteller durch Lovelock ersetzt. Dabei ging es nicht lediglich um eine historische Analogie, sondern um ein Erforschen der Diskurs-Protagonistinnen und -Protagonisten und ihrer, um Latours bekannten Akteurs-Operationsmodus ins Spiel zu bringen, *agency*: Welche Interessen und Positionen treffen mit welcher Handlungsmacht aufeinander, um Status und Gültigkeit neuer epistemischer Konstellationen zu verhandeln?

Besonders hervorheben möchten wir ein weiteres solch performatives Gedankenexperiment, welches in der zweiten Sitzung im Mai 2018 durchgeführt wurde. In verschiedene Gruppen aufgeteilt, versetzten sich die Teilnehmerinnen und Teilnehmer in die Rolle von „Einwohnerinnen und Einwohnern“ einerseits des alten Territoriums, des Nationalstaats, und andererseits des neuen terrestrischen Raumes. Die beiden Parteien sollten nun ein erstes Aufeinandertreffen simulieren und einen Weg finden, wie sie ihre unterschiedlichen Verhältnisse zur Welt einander vermitteln können. Die Leitkategorien, die es der jeweils anderen Seite näher zu bringen galt, waren die Identität der Gemeinschaft (*demos*), die Konstruktion der jeweiligen Gottheit resp. des religiösen Systems (*theos*) und die sich daraus ergebende Kosmologie (*cosmos*). Zugegeben, dies sind abstrakte Kategorien, die nicht leicht in performativer Interaktion zu vermitteln sind. Die verschiedenen Gruppen fanden dennoch bemerkenswerte Strategien, sich einander anzunähern. Hier soll beispielhaft ein Auszug aus dem Ergebnis der Arbeit einer Gruppe, selbstbetitelt als „Anonymous Terrestrial Meeting“, gezeigt werden, die die Form eines abwechselnd vorgetragenen, zum Teil ins Polyphone wechselnden Manifests angenommen hatte. Im folgenden Auszug spricht das Manifest aus der Perspektive des *theos*:

Believing that it's better not to believe, in contradiction.

I believe in the terrestrial, the possibility of chance, while my divinity is the future I seek for.

My limits are the ones I oversee and a certain self-evolving power from the multiplicity of interconnected parts.

Religion is caring.

My divinity is becoming, the possibility to move. The luxury to explore the world in a playful and energizing way and meeting strangers or talking to a stranger to understand others who are not in your inner circle.

Everyone is collective.

Being afraid of something is setting yourself a limit.

Having a set of values that orient judgement and vision, a point of reference that links me to the Other on a less tangible, human level.

"Taking care" not only of the self, but of what surrounds me, individual-collective responsibility, allowing for doubts and contradictions.

A daily routine, a moving mind, the feeling of being a part of a community.

friendship/family

health/taking care

to exchange, to learn

I believe in the never ending experimental flow of life.

Maybe I forgot where I wanted to go and now I am also not sure where I should go.

Knowing that there will be an end of life – my life is not endless – leads me to experiment.

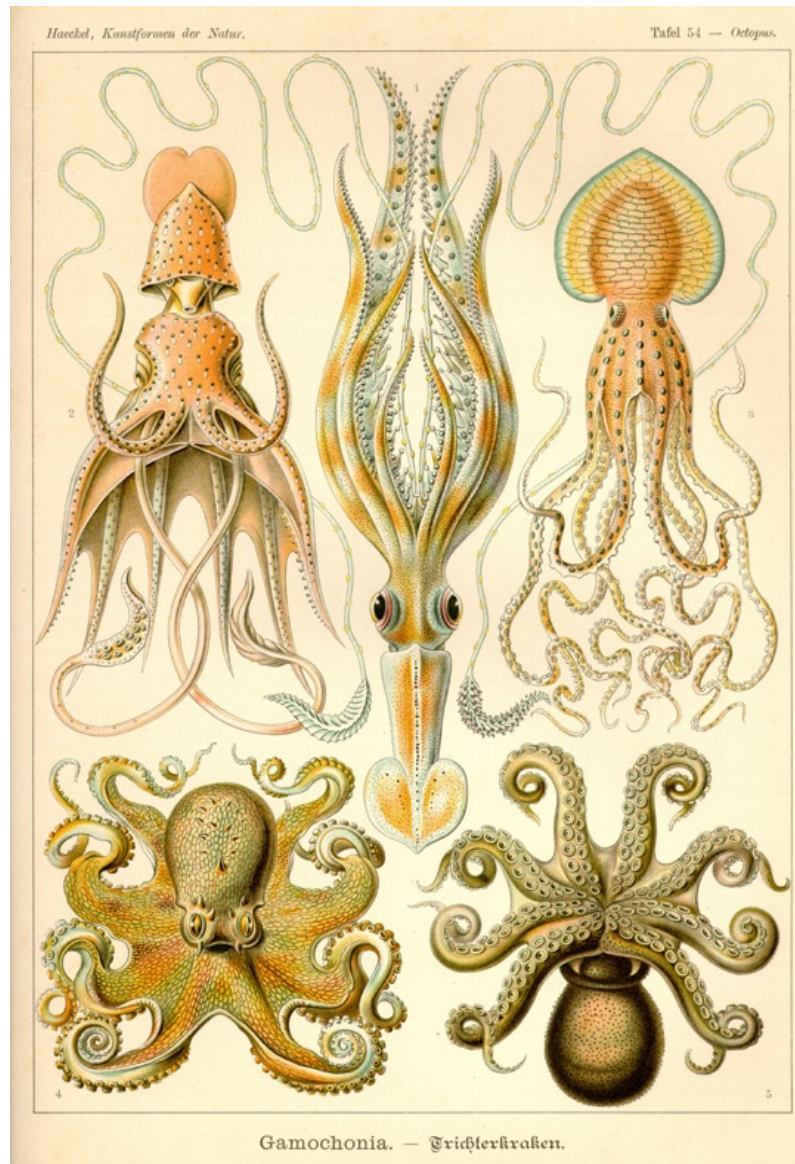
I feel like happiness and satisfaction might stop me.

Die Ergebnisse solcher Vorträge wurden im Anschluss verglichen und diskutiert. Im Fall des Manifests wurde dessen poetische Kraft als spekulatives Potential für eine „tastende“ Herangehensweise an die noch undeutliche Situation einer Begegnung zwischen Vertreterinnen und Vertretern des Territoriums mit Vertreterinnen und Vertretern des Terrestrischen hervorgehoben.

Ein weiterer wichtiger Teil des Forschungsseminars waren jene Aufgaben, die zwischen den einzelnen Sitzungen bearbeitet wurden. So entwickelten die Teilnehmerinnen und Teilnehmern zwischen Februar und Mai 2018 erste Skizzen für eigene Forschungsprojekte, die im Rahmen der Laufzeit des Seminars individuell oder in Gruppen bearbeitet wurden und zum Teil direkt zur Ausstellung beigetragen haben. Die in der Mai-Sitzung präsentierten Projektskizzen waren so vielversprechend wie vielfältig; sie reichen von Recherchen zum Ausstellungsformat, über theoretische und historische Beiträge, bis hin zu künstlerischen Arbeiten.

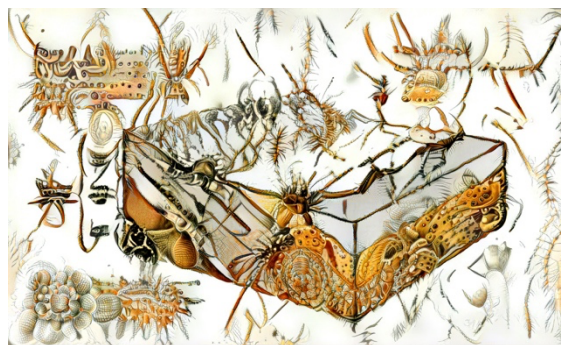
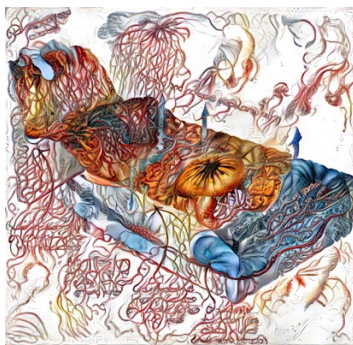
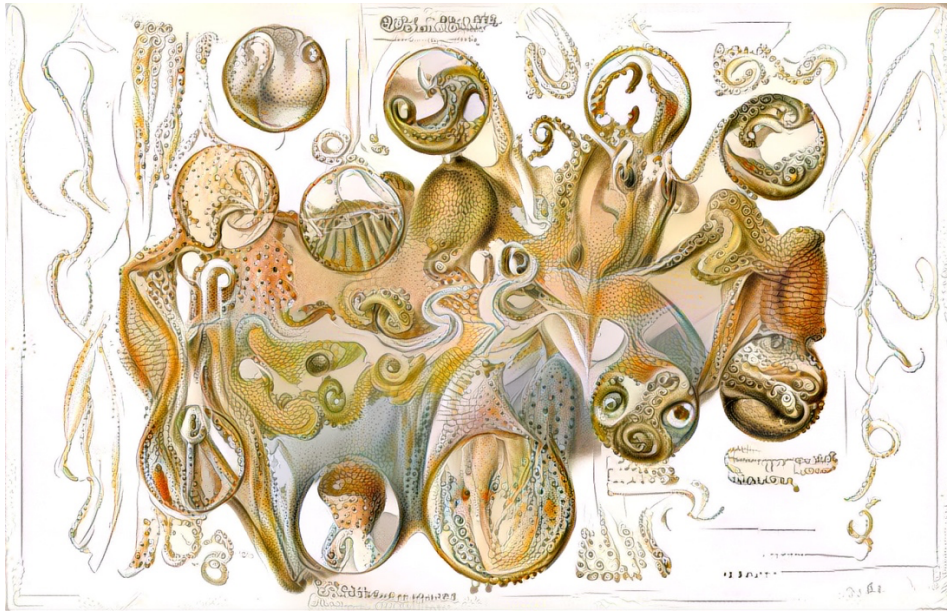
Zur letzten Kategorie gehört die hier exemplarisch gezeigte Arbeit von Michail Rybakov, Alumnus des Studiengangs Medienkunst an der HfG Karlsruhe; sie ist nur eine von mehreren Ideen, die er im Seminar vorgestellt hatte. Die Arbeit geht von den taxonomisch-klassifikatorischen Bildtafeln Ernst Haeckels (1834–1919) aus, der als Zoologe wie kaum ein anderer den sogenannten westlichen Geist der Moderne auf eine externe Beobachterposition auf die Natur „von außen“ eingestimmt hat – sein berühmter „Stammbaum des Menschen“ (1874) sieht bekanntlich den Menschen als Baum-Krone der Schöpfung vor. Rybakov bearbeitete nun diese Bildtafeln, und zwar nicht mittels des Genius des „modernen“ Künstlers und seiner Imagination, sondern vermittelt der technischen „Einbildungskraft“ von *neural networks*, vermittelt Bildprozessierung durch künstliche Intelligenz. Über *deep learning*-Algorithmen wurde das Programm mit Haeckel-Bildtafeln gefüttert und darauf trainiert, visuelle Muster zu erkennen. Daraus wurden schließlich neue Bilder generiert, indem der illustrative Stil Haeckels auf solche Schnittdiagramme aus den Geowissenschaften projiziert wird, von dem eines auch im vorliegenden Text zur Illustration der *critical zone* verwendet wird. Herausgekommen sind Bildwelten, die uns seltsam vertraut, aber dennoch faszinierend fremd erscheinen. Sie zeigen skurrile „Landschaften“ von ineinander gefaltetem biologischem Material – wie Lebenswelten, die ihre eigene Umwelt selbst generieren und die uns an jene Perspektive auf die Biosphäre erinnern, wie wir sie als *critical zone* zu lesen gelernt haben. Rybakov selbst über seine Arbeit: „We are conditioned to

look for meaning in scientific illustrations. While the meaning is lost through the process of neural style transfer, the illustration gets a lot richer visually, and is just as interesting to examine.<sup>23</sup>



Beispiel für eine der verwendeten Bildtafeln: Tafel 54, „Gamochonia“, aus Ernst Haeckels *Kunstformen der Natur*, Komplettausgabe (Leipzig und Wien: Bibliographisches Institut, 1904;





Ergebnis des *neural style transfer algorithm*; Michail Rybakov, 2018.

Nach diesem kurzen Überblick über das Critical Zones-Forschungsseminars lässt sich festhalten, dass dessen offener Rahmen eine der übergeordneten Forschungsfrage adäquate Art der Annäherung zu sein scheint. Diese Frage – *Wie orientieren?* – ist ebenso offen formuliert und auch von Bruno Latour selbst nicht beantwortet. Das Seminar näherte sich der Frage *explorativ*, mit experimentellen, mitunter phänomenologisch und performativen Mitteln. Der solide Input, der durch die einzelnen Vorträge Bruno Latours vermittelt

wurde – „Bruno Latour beim Denken zuschauen“ ist uns als faszinierte Rückmeldung der Teilnehmerinnen und Teilnehmer immer wieder begegnet –, in Kombination mit dem offenen Rahmen für Diskussionen, Reenactments, Performances, Gruppenarbeit und individuelle Forschungsarbeit zeigte die Vorzüge einer Kombination aus „vertikalem“ Unterricht und „horizontalem“ Austausch mit Bruno Latour in einer flachen Hierarchie. Nicht der Weg oder gar das Denk-Ziel waren dabei vorgegeben, sondern skizziert wurden Bedingungen, Symptome und Merkmale der Critical Zones, um davon ausgehend einen Möglichkeitsraum zu kartographieren, in dem – vielleicht – adäquate Narrationen und Repräsentationen des Neuen Klimaregimes entwickelt werden können.

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# **How to represent porosity to fill strategical emptiness? Some art and visual culture experiences.**

Damien Pelletier-Brun (Rio Vàn Eir), Lena Quelvennec

## **Introduction**

Henri Lefebvre (1991) described the peripheral spaces as empty, or at least this is how they have tended to be strategically perceived so that their resources can be exploited. Sometimes those peripheries are labelled as “nature”. In western culture, nature has often been considered as preceding the social contract, before society rose and started organizing it. Standing as the opposition to culture, it has been used as a mirror to confront, judge, legitimate, or condemn people’s actions, their laws, or their moral behavior. Bruno Latour’s critical zones are about visualizing what is made invisible in these peripheral spaces revealing the relationalities between human beings, non-human forms and their environments. Today, by observing, measuring and analyzing, humans start to understand how these relationalities are intertwined.

For this article, we decide to offer a double perspective: one emerging from visual studies (Lena Quelvennec), the other from the art and cinema (Rio Vàn Eir). As researchers, we both find some interests into questioning representations of this wide idea that is “nature.” However, those interests do not rise and express themselves from the same experiences and we think it could be interesting to associate and learn from each other.

As a result, this text will be organized in two parts. We will first discuss the concept of “strategical emptiness” visibility. To contextualize and produce a more spatial understanding of this concept, we will use Quelvennec’s work experience with a museum collection in the very specific environment of the Swiss Alps. The position of the Alps in Switzerland is peripheral, while simultaneously being central as a symbolic space. This is the result of a few centuries (since the Romantics) that have seen the emergence of the ideas like the Sublime and the Wilderness and of the notion of “lost paradise,” while imperialism, natural sciences and tourism were developed. Those terms will be analyzed as conceptual tools to understand how a dominant visibility, through sciences and arts, have influenced the perception of certain types of landscapes and the relationship between human and non-human developed through them.

Today, the practices of sciences (social and natural) have changed and artists again try to appropriate these new approaches to produce knowledge and to give them new visibilities. They do not want to pursue a certain form of art history and its hundred-years-old canons, but to produce different ways to look at what has been constructed under the label of “nature”. Being careful to small details that the spectators as cultural group may not be trained to read or even to see, could be a way to redefine this idea of nature.

In the second part of the text, we will present Rio Vàn Eir’s work *Jonction* and some of his experimentations while gathering visual data of peripheral spaces. We intend to discuss his position as an artist and what kind of images he tries to craft. Based on François Laplantine’s theory, the project of this experimental film is to be closely attentive to how things in nature are porous. Modern sciences have always struggled to deal with the porous as a theoretical idea. Their categorical mindset tends to miss or to disregard what is changing, porous, undefined. Mental representations of the world correspond to what tools are capable of measuring and visualizing. *Jonction* aims to focus on visible micro interactions and transmissions in order to provide mental pictures of how nature escapes from any wish to clas-

sify it. To do so, Rio Vàn Eir tries to use various imaging technologies (from ultrahigh-speed cameras to microscopes or even miniaturized embedded cameras) that allow and provoke a large range of visions. We will explore what kind of visualities it produces and show how the notion of scale associated with the concept porosity may be an answer to the problem caused by strategical emptiness visuality beside their first apparent resemblance.

### Peripheral Space and visuality

The “Musée d’art du Valais” is located in the middle of the Swiss Alps, in the Rhone Valley. Because of its geographical and historical position, this museum collection focuses mainly on representations of landscape, more specifically the Alps and the people living there. It will be used to contextualize the concepts that will be developed in this article and it also puts into perspective Rio Vàn Eir’s work. The Swiss Alps, because of their mix between high visibility and remoteness and their complex relationship to colonial knowledge<sup>1</sup> can be analyzed as what the French philosopher Henri Lefebvre named “peripheral space.”<sup>2</sup> In 1974, Lefebvre described in his book *The Production of Space* how France is mostly constituted of peripheral spaces which are relegated “to the realm of underdevelopment and ‘touristic potential’” in opposition with the centers where the decisions are made.<sup>3</sup> He went on with the idea that peripheral spaces become invested not only by national park and tourism (which for him are incidental), but by the military who also uses this space for strategical development. He then wrote:

These [peripheral] spaces are produced. The 'raw material' from which they are produced is nature. They are products of an activity which involves the economic and technical realms but which extends well beyond them for these are also political products, and strategic spaces.<sup>4</sup>

- 1 Schär 2015, 39-40.
- 2 Lefebvre 1991, 84.
- 3 Ibid.
- 4 Ibid.

For Lefebvre, spaces are mostly human productions, organizations where the peripheral and the central spaces are in conflict, the latter always exercising domination on the former until maybe the power shifts or one is destroyed. “Peripheral spaces” are defined as “strategic spaces”. This idea of “strategy” can be related to the term “visuality” as explained by Nicolas Mirzoeff in *The Right to Look*.<sup>5</sup> Mirzoeff based his notion of visuality on Jacques Rancière’s structure of the sensible.<sup>6</sup> It comes from the idea of a general looking at the battlefield and trying to predict the enemies’ moves helped by maps, information and reports. Visuality is an integral part of power strategy that participates in what is considered evident or not, what becomes visible or not. In more recent article, Mirzoeff connects visuality to the Anthropocene, defining the Anthropocene visuality as follow: ‘(it) keeps us believing that somehow the war against nature that Western society has been waging for centuries is not only right; it is beautiful and it can be won.’<sup>7</sup> US-European cultures have tended to think of humanity as outside of nature, constantly battling to dominate it. This idea of “visualizing to control” was still recently exemplified by the way NASA is observing wildfires<sup>8</sup> or how US government reacted to Dorian hurricane.<sup>9</sup>

The peripheral spaces are strategically produced from nature, or at least the definition of nature that seems to imply the absence of human beings. Inversely, the centers making the decisions are not considered as part of nature. Of course, for Lefebvre the question about overcoming the separation between culture and nature was not his first concern. Nevertheless, from the perspective of Anthropocene visuality, the ideas of “periphery” and “nature” have in common to be both strategically perceived as empty. Not literally empty, strategically empty, in the sense that, when it is convenient for a social,

5 Mirzoeff 2011, 2.

6 Rancière 2000, 12-14.

7 Mirzoeff 2014, 217.

8 Voiland 2019, NASA Earth Observatory.

9 President Donald Trump wrote on Twitter that he was “monitoring hurricane Dorian” on August 30th, 2019.

<https://twitter.com/realDonaldTrump/status/1167651639806898176> (19.09.2019).



economic or political project, it can be perceived as acceptable to exploit, destroy or – equally violent – to conserve and to regulate these spaces. The different relationalities between the actants present there can be ignored. The word “actant” comes from Jane Bennett’s book *Vibrant Matter* and is based on Bruno Latour’s term for a source of action.<sup>10</sup> It covers humans, non-humans and matter, often the combination of them as actants always intervenes among others potential actants.<sup>11</sup> However, through strategical emptiness, those actions are often simplified or simply remain invisible. This may not be done deliberately, because those relationalities are not evident. They are not apparent under the “strategical emptiness” visibility, implying that they are not legitimized. In this sense, this visibility has sometimes been applied to space as vast as continents or as small as an abandoned garden in the middle of a city.

### Strategical emptiness in the Alps

The Alps can be considered a peripheral space produced from nature (again this nature outside of humanity). Historically, this region has been considered underdeveloped, since industrialization could not develop there as fast as in the Swiss Plateau where two thirds of the Swiss population live.<sup>12</sup> During the end of the 19<sup>th</sup> and the beginning of 20<sup>th</sup> century, this aspect allowed the military investment, the development of tourism and the status of national park to progressively take place. Even more, these three dimensions shape a visibility of the Alps which still sometimes freezes this region into one specific visual regime, gathering only a certain form of data, and reinforcing this “us, human” and “them, non-human” separation. The Alps constitute very specific multi-species assemblages that have developed because of their geological and climatic conditions but also because

10 Latour 2004, 75.

11 Bennett 2010, 9.

12 Find here an infographic illustration produced by Swiss info. Nguyen – Mariani 2014, SwissInfo.ch, [https://www.swissinfo.ch/fre/politique/par-les-chiffres\\_la-d%C3%A9mographie-suisse-galopante-et-vieillissante--en-9-infographies/41072892](https://www.swissinfo.ch/fre/politique/par-les-chiffres_la-d%C3%A9mographie-suisse-galopante-et-vieillissante--en-9-infographies/41072892) (23.09.2019).



of their symbolic value for the Swiss and the European population more generally. These conditions participate to their strategical interest in the military sense. If the military aspect of the Alps will not be extensively developed here, it remains important since many of western relations of nature are built on the idea of conquest and defense. Historically, the control of the mountain passes is a strategical asset since the Alps are natural borders and occupied a rather central position to rally the North and the South or the West and the East of Europe. However, it is interesting to notice that the military vision of the Alps as a strategical refuge – hard to access and easy to defend – is actually more symbolic than effective. Oliver Zimmer shows how Swiss councilors and generals just before the Second World War referred to the Alps as a “defensive ring” while he explains that this “defensive strategy, in the event of a foreign invasion, would have left defenseless the great majority of the Swiss population who lived in the industrial and economic centres.”<sup>13</sup> How could the Swiss population be convinced by such a strategy? Because the Alps are a strategically empty peripheral space, surrounded by visibility and that can be filled with this discourse of authority. This discourse is also legitimized by its connections to the notion of “lost paradise” that arises from the progressive domestication of the Alps during the 19<sup>th</sup> century. Every Swiss citizen did not welcome the industrialization of the rest of the country and started to look at the mountains and their inhabitants as belonging to “an unspoiled peasant world.”<sup>14</sup> The alpine nature, after its wilderness has been tamed, got the reputation to produce strong and healthy men, which was again a quite selective understanding of the alpine space.

### Science and positive wilderness

In this text, wilderness is understood as defined by Cronon’s text *The Trouble with Wilderness* (1995), but it is acknowledged that this defini-

13 Zimmer 1998, 653-654.

14 Ibid., 655.

tion is limited in itself. For example, the human body and its assemblage of human-non-humans could also be considered wild (Snyder, 2010: 16).<sup>15</sup> However, this implies a change of scale that will be addressed later. Cronon's concept of wilderness seems the most influential on the visibility of strategical emptiness. He elaborates on Bruke's concept of the sublime, an esthetical experience, mix of fear, wonder and reverence in front of nature greatness and related to the Alps among other places. Cronon defined wilderness as follow:

Far from being the one place on earth that stands apart from humanity, it is quite profoundly a human creation – indeed, the creation of very particular human cultures at very particular moments in human history.<sup>16</sup>

He goes on with:

As more and more tourists sought out the wilderness as a spectacle to be looked at and enjoyed for its great beauty, the sublime in effect became domesticated.<sup>17</sup>

Explaining how wilderness is a human creation from a very particular cultures and histories, Cronon connects the explorations of wild landscapes to the birth of tourism and the domestication of the sublime aesthetic. Urry and Larsen, in their book, *The Tourist Gaze*, allows a connection between the US landscape and the Alps expanding on how the latter corresponds to a “unique visual, cultural, geological and natural phenomenon, indissolubly wed to European history”<sup>18</sup> In the case of the Alps, the tourism in expansion at the beginning of the 19<sup>th</sup> century is also closely organized in relation to scientific expeditions to study the fauna, flora, geology and glaciology. As Schär describes in his text *On the Tropical Origins of the Alps*, natural history is a European discourse that greatly participated in the construction of the visibility surrounding the Alps. Indeed, if both the Tropics and the Alps could be perceived as peripheral space, the former has a negative form of wilderness, “with a prevalence of heat and vermin”

15 “Wildness is not limited to the 2 percent formal wilderness areas. Shifting scales, it is everywhere: ineradicable populations of fungi, moss, mold, yeasts, and such that surrounds and inhabits us.” (Snyder 2010, 16).

16 Cronon 1995, 7.

17 Ibid.

18 Urry – Larsen Vision and Photography 2011, 4.

where the later was considered positive and moderate by the scientific Swiss elites of the time.<sup>19</sup> Those expeditions, often documented by artists, were also looking for a way to legitimize the place of Switzerland in the global context of colonization.<sup>20</sup>



Ill. 1 Lorenz Justin Ritz, *Portrait de l'ingénieur, Ignace Venetz*, (ca. 1826), oil on canvas, Musée d'Art du Valais, Sion.

19 Schär 2015, 34.

20 Ibid., 45.

This can be observed in the collection of the Art Museum and more specifically two paintings by local artists of the 19<sup>th</sup> Century. The first painting, a piece by Lorenz Justin Ritz, is an official portrait of Ignace Venetz, a Swiss engineer, naturalist, hydrologist and glacier specialist in the 19<sup>th</sup> century (ill.1). Venetz wrote about the glacial erratic (those rocks that do not belong in their current geological environment) and he supervised the “correction” of the Rhone river. Venetz is represented doing measurements on a map for the project of draining some flooded area. Lorenz Justin Ritz also included a painting in the painting depicting the Venetz’s project of Gietro Glacier dam. In 1818, the glacier broke and devastated the valley underneath it, an event that Ritz could not have seen himself. This painting is a reminder of this tragic event but also the celebration of the scientist that “fixed” the problem. If this painter may not have followed the scientists in the mountains, his son, Raphaël Ritz has, as shown in the painting, *The Engineers in the Mountains* (ill.2). It represents some engineers working despite the mountain mist and cold. They are in the background doing in situ measurements while the local guides are waiting for them to finish and taking a break. Guide started to become a real profession at that time. Raphaël Ritz was both a painter and a naturalist and he was part of the Swiss Alpine Club, which followed on the traces of the British Alpine club that started the transition from science to tourism. Even if some traces of the Sublime aesthetic remain in the fog or the glacier, those paintings showing people studying the mountains, gathering data about it, illustrate how the Alps become more civilized while establishing the criteria of their wilderness. Scientific and artistic expeditions did not avoid the idealization. Indeed, by depicting scientists bringing the civilization in the mountains, reinforces the projection from the population of the new industrial centers on the Alps populations and environment like purity and temperance and a strong sense of European identity.<sup>21</sup> By contributing to the definitions of civilization and wilderness, the Swiss elites secure their places on the right side of

21 Ibid., 41.

those definitions, while using the Alps peripheral space more as a symbol than as a physical place with its own actants.



III. 2 Raphael Ritz, *Ingénieurs dans la montagne*, (ca. 1870), oil on canvas, Musée d'art du Valais, Sion.

### Civilization and domestication

During the same period, the accessibility of the Alps was developed, resulting in more people visiting the mountains until they started to be altered by industrial and touristic development. Natural park projects were undertaken to protect the disappearance of this preserved natural environment and the lifestyle of the local population. The status of Natural Park and the conservation laws that follow it come hand in hand with the scientific understanding of the Alps as a peripheral space. The more the region was measured and understood,

the more it became domesticated, visitors helping with the circulation of the idealistic images of the place. This idea of domestication as the opposite of the wild is problematic in itself.

Anna Tsing perfectly states this idea:

Domestication tends to be imagined as a hard line: you are either in the human fold or you are out in the wild. Because this dichotomization stems from an ideological commitment to human mastery, it supports the most outrageous fantasies of control, on the one hand, and wild species self-making, on the other. Through such fantasies, domestics are condemned to life imprisonment genetic standardization, while wild species are 'preserved' in gene banks while their multi-species landscape are destroyed.<sup>22</sup>

Protecting the wild then becomes a form of biopolitics forced on a defined space where the human beings in charge can decide what can live or what can die.<sup>23</sup> The Matterhorn is a good example of a protected area. There are many of its representations in the Art Museum. This mountain with its really typical pyramidal shape represents one of the Swiss symbols and one of its most famous Alpinism challenges. Illustration of a mix of scientific interest, sense of adventure and artistic attraction, the mountain has been heavily represented since the 18<sup>th</sup> Century in Europe and later all around the world. Corinne Vionnet, a contemporary Swiss artist, shows this aspect in her work, *Matterhorn*, photomontage composed of thousands of views of the famous mountain found on Internet and freezing the Matterhorn in one eternal point of view (ill.3). This shows the importance of representations to nourish and establish the dominant visuality in place. During the last few years, and as a consequence of climate change, the Matterhorn permafrost is melting, many rocky pans falling from the mountain.<sup>24</sup> This worries scientists and the tourist exploitations because it provokes more accidents but also because the form of the mountain is altered as it is readable in many Swiss Newspapers.

22 Tsing 2012, 144.

23 Briemann – Anderson 2017.

24 Christinaz, 2019 : letemps.ch. <https://www.letemps.ch/sport/cervin-un-terrain> (23.09.2019).





III. 3 Corinne Vionnet, *Matterhorn*, Photo Opportunities 2007, photography, Musée d'art du Valais, Sion. © Adagp, Paris, [2007].

To summarize, even if the military, the tourist, the artist or the scientist gather different information with different tools and purposes, all contribute to the same visuality, implying a recurring relation to the world. The tradition of landscape paintings for example has worked to reinforce the strategical emptiness, by standardizing the way people look at a place but also by focusing on the separation between the wild and the domesticated and on the value of the views it produces. Thankfully, since a few years, artists and scientists start to challenge this visuality to try to change this relation to emptiness that seems to have been the norm for so long. As an example, Marie Velardi's work also belongs to the museum collection (ill.4). It comprises three drawings of the Matterhorn but this time, using scientific data gathered by geologists to predict how the mountain will evolve through time. Of course, since it is speaking of geological time, the scale is huge, offering a representation of 40,000 and 500,000 years in the future. This change of scale is connected to one of the definitions of critical zone given by Bruno Latour:

While space, in earlier times, was what could be surveyed by a detached human gaze (or by the 'view from nowhere' favored by older views of science), critical zone defines as a set of interconnected entities in which the human multiform actions are everywhere intertwined. While such had already been the case in geography, even there the idea was nonetheless to *layer* human transformation of space and landscape *on top* of a layer called 'physical' and which was supposed to remain fairly stable or at least unconnected with human action deemed to be at different scale (in time and space).<sup>25</sup>

This quote connects the action of critical zone to the human gaze on space. This human gaze can be fixed but that can also be changed. In a sense, Corinne Vionnet's work is also the sign of that, since even if all the views are the same, they are also all slightly different creating a blurry aura around the recognizable shape of the mountain. To do so, Latour offers to get rid of the layers or changing the categorizations. It still implies to gather data, however this time, this data is not supposed to produce strategical emptiness by focusing on very specific layers of the space and then isolating more and more the differ-

25 Latour 2014, 5.



ent element studies. The idea becomes to reveal the critical zone, creating porosity and showing a continuity where even mountains movement is taken into account. Today, the Anthropocene visibility, the war on nature, is being more and more challenged.

*Vue sur le Cervin, face Nord-Est, en 2015, Vue sur le Cervin, face Nord-Est, dans 40'000 ans, Vue sur le Cervin, face Nord-Est, dans 500'000 ans*



*Vue sur le Cervin, face Nord-Est, en 2015, Vue sur le Cervin, face Nord-Est, dans 40'000 ans, Vue sur le Cervin, face Nord-Est, dans 500'000 ans, 2015, crayon sur papier, 36 x 48 cm.*

III. 4 Marie Velardi, Vue sure le Cervin, face Nord-Est, en 2015, Vue sur le Cervin, Face Nord-Est, dans 40'000 ans, Vue sur le Cervin, face Nord-Est dans 500'000 ans, 2015, drawing on paper, Musée d'art du Valais, Sion.

After explaining how peripheral space and visibility created through discourses and representations produce standardized ways to understand human and nature relationship, this text will now focus on one artist's work. These conceptual tools search to reveal the impacts of the representations of nature while being applied to a specific historical background. Rio Vàn Eir has the same project while working with visual experimentations. Sensible to the change of scale and elaborating on the concept of porosity that interrogates the strategic emptiness, this artist tries to confront dominant representations of nature while questioning his own point of view. Rio Vàn Eir tries to visually address questions such as: what does "observing"

mean? How are the conceptions of the world entangled with the produced images of this world? What are the relations of power maintained with the social and material environment? This video artist and cineaste establishes methods or apparatus of imaging that allow to reveal or to question these conceptions. To address these questions, we will share Rio Vàn Eir's experience working on one of his installations called *Jonction*. This installation is now leading him to a new, broader project of a set of interconnected installations that are still in the recon phase. We will discuss some of the leads that Rio Vàn Eir intends to follow while filming these recons and how he develops his idea of porosity.

### Rio Vàn Eir's theoretical orchard

To explain how Rio Vàn Eir works with the idea of porosity, one needs to take a detour by the work of a French anthropologist called François Laplantine. For Laplantine, everything in western societies predisposes to pay attention only to what is clairvoyant, contrasted, strong, and what is not mixed.<sup>26</sup> Extensive rationalization of taxonomy can difficultly assume or perceive all the tiny vibrant links in the world.<sup>27</sup> A classic example showing this difficulty is visible in how sciences classify and understand mushrooms, which have common characteristics with both animals and plants.<sup>28</sup> According to Laplantine, anthropology has also been structured to construct monographic studies, not “polygraphic” ones.<sup>29</sup> The way occidental science has been developed conceives its subjects as enclosed and timeless areas.<sup>30</sup> Any intrusions — geographical mixing — or historicity — time mixing — are considered problematic interferences that alter what is believed to be the “true nature” of the studied subject.<sup>31</sup> This conception hinders the possibility of a dynamic knowledge of what

26 Laplantine 2003, 25-28.

27 Ibid., 271-272.

28 Tsing 2012, 142-143.

29 Laplantine 2003, 220-221.

30 Ibid., 223.

31 Ibid.

becomes, what occurs and the possibility to understand constantly moving things.<sup>32</sup> In his 2003 book *De tout petit liens*<sup>33</sup>, Laplantine calls for the necessity to conceive the diffused, the elusive, the permanent processes, the transitional, the very thin ties. Using literature and cinema examples, he studies and shows ways to perceive the world in opposition to the western impulse to partition and to isolate. He points out that the small, "precarious" and "ephemeral" links cannot be preconceived.<sup>34</sup> They are perceptible under a constant regime of experimentation that may fill the gaps created by strategical emptiness. This way of thinking is the center of Rio Vàn Eir's work on nature representation. It has led him to question a visual conception carved out of what he calls "porosity".

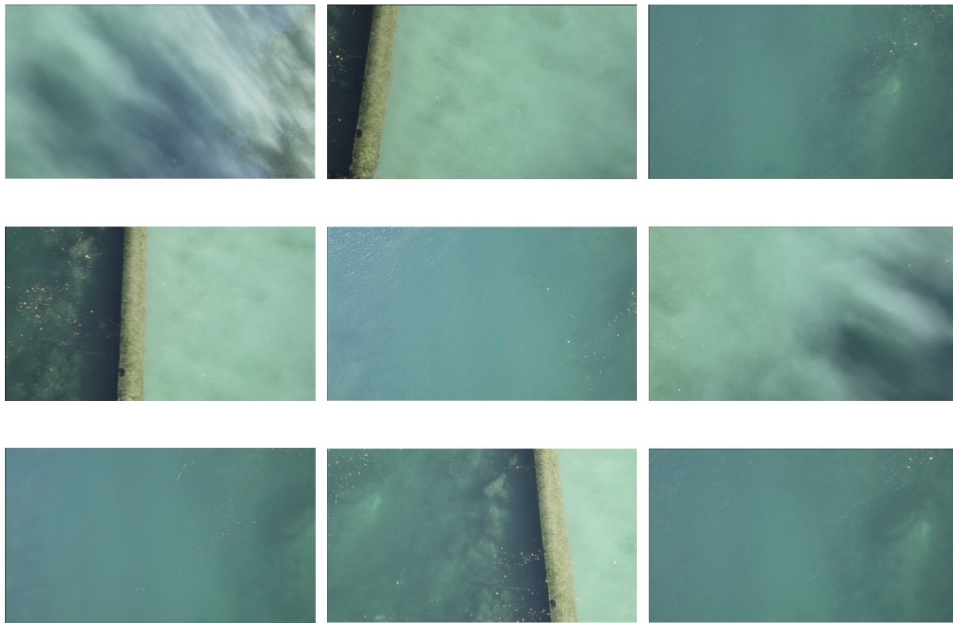
Porosity measures the amount of void in a material. It can be referred to as a fraction of the volume of void over the total volume. Strictly speaking, it refers to the accessible void from the surface. Porosity offers space to what surrounds it. It shows that things are not partitioned, separated, pure, but continuously connected and inter-penetrable. It implies and suggests more thickness and depth than surfaces. It is about mixing, infusing, blending, incorporating, mingling, entangling... It is a process, a question of conductivity. It is working against the idea of impenetrable borders between things. Increasingly sciences and epistemology try to define news cross-cutting approaches taking into account humans as well as the non-human and matter, in other words actants. Thinking and showing continuity through porosity is a way to think afresh from the nature/culture, human/non-human dualism and to reject the delimitations of strategical emptiness. It can apply geographically in rivers, conceptually to social interactions but also visually in the mix of two waters from a same watershed. How can this idea produce image of the world? How to apply this conception to imaging tools? How does Rio Vàn Eir visually apprehend porosity? *Jonction* is the starting point to answer these questions in this artist's work.

32 Ibid., 220-223.

33 "some very small links", authors' translation.

34 Laplantine 2003, 245.

### Jonction



Ill. 5: Rio Vàn Eir, *Jonction*, 2013, still frame, © Rio Vàn Eir.

*Jonction* (ill. 5) is a video installation that Rio Vàn Eir filmed in 2011 at the point of contact of two rivers in Geneva (Switzerland). The Arve and the Rhône rivers mix at this point with two different water qualities accordingly to their journey upstream. The Rhône is decanted in the Geneva Lac where the Arve comes directly from the glaciers and is saturated in silt. This meeting point is aptly named “Jonction” (junction). The difference in their qualities gives a visual support to what proceeds when two liquids assimilate. For containment purposes, a wall was built underwater in the middle of the river and visually underlining the junction. It is a very interesting zone in terms of human management of the land. The Arve is a river nearly contained from beginning to end due to its virulence and frequent flooding. All the surrounding land occupation was enabled relatively recently through this extensive containment method. On the other side, the stream of the Rhône is fully controlled by the SIG (Geneva’s Industrial Service) using a series of sluices implanted just a few hun-

dred meters upstream of the “Jonction”. As with a critical zone approach, this place gathers lots of different geographical, geological as well as social and environmental problematics implying Geneva’s control of the Rhône. The water stream is for example directly indexed on the electricity’s price. When its price is high, the SIG suddenly releases huge amounts of water in order to make a maximum of electricity, which causes damage to local flora and fauna and thus changes the silt saturation level in the water.

Rio Vàn Eir’s first interest in this place is linked with his approach of nature representation. It started with the abstract idea that, in what is usually call “nature”, borders are penetrable paradoxically underlined by the visual presence of the wall. He wanted to visually incarnate porosity by representing the blending of distinguished entities. However, *Jonction* is more than an illustration of the blending of waters, it is a visual way to conceive porosity. This installation shows a quality of interactions revealing this constructed border as a place of exchange. Rio Vàn Eir filmed this place frequently, at many different times of the day, different seasons and different weathers in order to understand the multiple visual variations of this place. He tested different points of view, means of shooting, camera angles, different types of movement and fixity. Rio Vàn Eir wanted to capture the “dialogue” of these two rivers. He gradually noticed all the micro-variations taking place at different scales and that sometime interact: wind, water saturation in silt, light, floating leaves and others debris, level of water and stream speed, birds and tourists, even the direction of the water sometimes flowing over the wall in one direction, sometimes in the other. Day after day, he got convinced that a place can be a subject by itself, questioning how multiple factors interact and impact the way a location looks, grows and acts. A place that is seen as something fixed, with a permanent name, is continuously moving, always different from one time to another. This led him to a peculiar movement of camera that mixes and joins the two rivers and that is edited with a continuous rhythm that reveals the pace of the flowing water. Rio Vàn Eir worked on showing how this place is in a way

“breathing”.<sup>35</sup> He looked for camera movements that would include these micro-variations, this “breathing” and even his own breathing rhythm while filming.<sup>36</sup> This “breathing”, constant movement enabled by porous zones, acknowledges the continuity between elements. This continuity opposes to a vision of separated spaces proposed by strategical emptiness.

*Jonction* led Rio Vàn Eir to use porosity as a visual and conceptual approach to nature representation. Keeping in mind the concept of “porosity”, how can a western artist visually apprehend it? He started to look for other places at various scales where porosity could be revealed and got interested in the peripheral spaces like forest or riverbeds. These areas are categorized as resources, biotopes or tourist’s recreational areas, while the way the observer limits those categories is rarely questioned. He then decides to interrogate how he gathers data about these spaces.

### Enforested recons

Recently Rio Vàn Eir started investigating ways of recording and representing porosity outdoors, in the “open air”. Westerners miss a word for it as they rely on the ideologically connoted word “nature”. The French philosopher Baptiste Morizot uses the word “s’enforester”<sup>37</sup> which literally means: “grabbing the forest onto oneself” to talk about these “outer” spaces. This word has the benefit of dealing with “identity”. It has a porous and “self-embodiment” connotation but is restrained to forests. Rio Vàn Eir has been interested in examples of images and artefacts conceiving the world differently than the western naturalist paradigm referring to Descola’s depictions analysis. He classifies human representations into four ways of thinking the world: totemism, animism, naturalism and analogism.<sup>38</sup> Each of

35 Using living terminology for un-living things gives a different approach to actants and helps to conceive and understand them differently.

36 In order to make steady shots one has to control his breath; therefore, Rio Vàn Eir considers it as part of the imaging process.

37 Morizot 2018, 25.

38 Descola 2010, 11-18.

these four understanding of the world have their own repercussions on how one depicts what is observed. The naturalist perspective adopted by westerners and resulting from the separation of human and nature is based on an idea of objectivity and visual mimesis of the world addressing everything with the same amount of details.<sup>39</sup> Rio Vàn Eir, as a French white man formed in a naturalist tradition tries to find ways of representing porosity using the tools and visual approaches with which he was brought up. To do so, he follows the path taken by the reflective turn in post-colonial social sciences, taking into account from where you talk and how you create data. Anthropologists have for example published the *Lausanne manifesto* in 2011 for a “non-hegemonic anthropology” to define markers for an approach of alterity.<sup>40</sup> These markers are, among others, mutual knowledge construction, symmetry, reciprocity, ethics or political engagement.

Rio Vàn Eir engaged in a series of recons following different leads in order to find how these “markers” could be visually applied to such radical otherness as a plant or a rock. In a way, he tries to produce representations of nature outside of the visibility of strategical emptiness, by questioning from where he observes. By the strangeness, the otherness of the images he constructs, he interrogates the evidence and shows how porosity is a reaction to previous discourses both from the sciences and the arts. Art emerges from questions and constraints; addressing porosity through video installations is a way for Rio Vàn Eir to develop creative thinking. How to depict continuity with a tool that frames? How to visualize porosity with a tool that cuts? How to present thickness with a tool that operates with reflected surfaces? In the following part, we will present some of the leads experimented by Rio Vàn Eir through moving images. Rio Vàn Eir have figured different axes on which to play at different levels. These axes are built around the human presence and the quality of the gaze it offers into the image production. Taking into account the

39 Descola 2010, 13, 73-97.

40 Saillant et al 2011, 8.

point of view and the type of gaze implies to work on different levels, on different scales. Every recon that will now be presented is connected to a visual illustration that will be commented.



Ill. 6: Rio Vàn Eir, *Forest recon*, 2018, still frame, © Rio Vàn Eir.

The filming presence by itself is the first criteria to take into account the act of observing. What could appear as an empty hole (ill. 6), under a fallen trunk, provides already all the tension between the act of observing and the way this observation happens. By being able to read and to visualize different signs (fur, scraping, footprints) in and around this trunk, one knows this empty space is inhabited. Wild boar frequently uses this place to shelter and rest during the day. However, only an empty stack of branches can be filmed from a close point of view at a wide angle. Because the camera holders have a human smell, visible bare skin and make sound even if they are careful what can closely be filmed remains empty, and potential preys are hiding. In order to record them, one has to set out all kind of schemes, traps and long-distance lens and in doing so adopts a predator's view aiming at a prey downwind – as it is used in many animal documentaries. Rio Vàn Eir would like to find ways to “fill” what looks empty without hiding like a predator and to elaborate visual clues of his presence that are imbedded in the image production.



Another key question in the image production is the types of view produced by the mechanical means. It is obvious that there is a relation between the positions where the sensor is placed, what is its size and what lens is used. The question is what type of apparatus allows what type of gazing quality. The challenge is to fight against the natural tendency of digital means to give a clinical, controlling view from above, what Bruno Latour calls “the view from nowhere”.<sup>41</sup> With the digitalization of the image making process, multiple filming mechanisms can be accessed. This profusion of shapes, sizes, resistances and technical specifications makes it possible to take into account numerous scale ratios and types of relations. Multiplying or selecting carefully these parameters gives more possibilities to find the most relevant point of view to reveal a specific interaction. In order to visually understand the actants’ interactions, the filming apparatus must come into resonance and becomes a magnifying process. This proliferation of scales put together in a video or an installation is in line with the ethical approach proposed by Laplantine who prefers fragmented visions of the world over a totalizing and unifying one, that necessarily cheats and bends reality in order to be so.<sup>42</sup> This can only be answered under a state of constant experimentation<sup>43</sup> “calibrated” on the situation. For example, the lack of controls in the esthetical framing is a way to allow the surrounding actants to frame accordingly to their being. This “calibration” is a dynamic understanding of what is at stake. A good example of this is the sensory ethnography film *Leviathan* by Véréna Paravel and Lucien Castaing-Taylor.<sup>44</sup> The small cameras they used had no screens, disabling the possibility of framing. They were left in different places such as fish tanks or fishing nets to be moved among the fishes, seagulls, starfishes and water reacting to the interactions of these elements. Filming what is already known produces an illustration. It is about confirming or proving. Whereas making a recording experiment is about

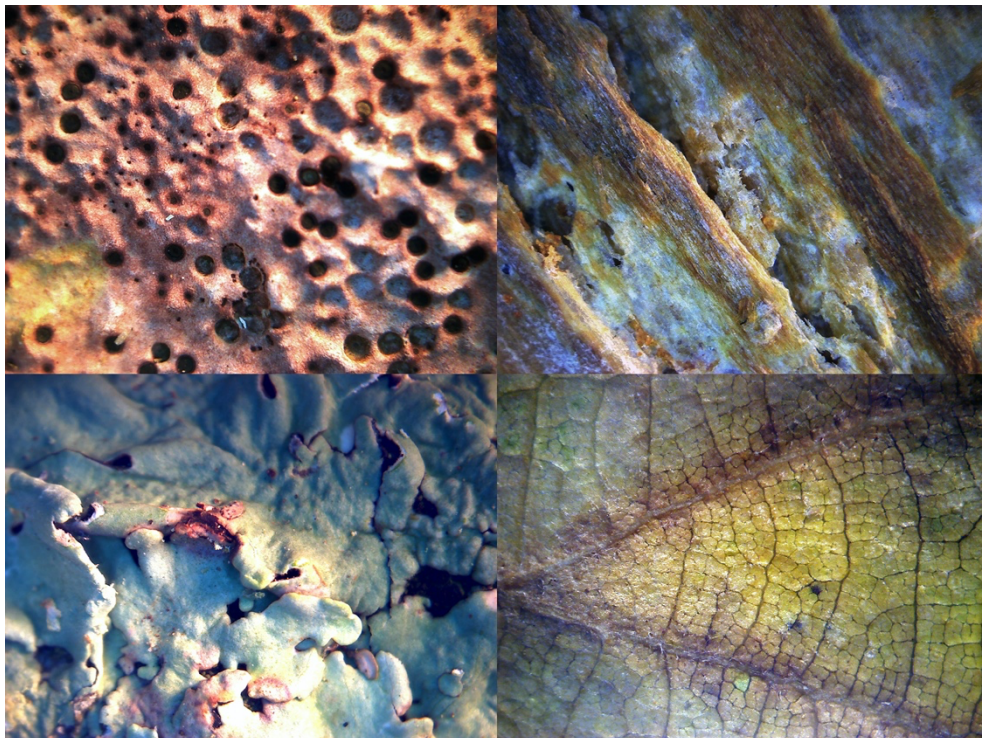
41 Latour 2014, 5.

42 Laplantine 2003, 36, 132-133.

43 Ibid., 245.

44 Paravel – Castaing-Taylor 2012.

filming a dynamic. It is about being seized by something that flees, something that vanishes as it reveals itself. Rio Vàn Eir questions himself on what to focus on and tend to film where there is “nothing to see.” He uses the editing time process and displacement to teach himself and later his audience to learn from what have been unintentionally recorded. For now, Rio Vàn Eir tries to figure out ways to focus on surfaces and their depth: riverbeds, barks, stones, bryophytes (mosses), things that by definition cannot be pure (ill. 7). These zones possess a great porosity factor and usually, conveniently enough, host few living beings. He focuses on things that are considered fixed but that are in fact continuously moving if they are carefully looked at. He pays attention to things that have more than one status accordingly to how they are considered. A leaf for example is a porous chemical mediation for the tree as well as it is food, nesting shelter, shade and more, all at once.



Ill. 7: Rio Vàn Eir, *Porosity recons*, 2018-2019, still frames, © Rio Vàn Eir.

A different lead for the reflexivity of the gaze is to take into account the technological process that produces the images that are looked at. Technology is not neutral, and it has a life of its own. With photography, scientists have noticed this from the beginning. One example is when they used photography to make a map of the stars.<sup>45</sup> Believed at first to be factual proof, scientists quickly built a protocol that multiplies the number of photography for each celestial body because they noticed that a scratch on the photosensitive surface could be mistaken for a star. In the same way, it is possible to reveal the sensor's pattern embedded in the image with digital cameras and under certain conditions. The sensors resolution and the texture of the image can be mistaken with the texture of what is filmed under specific conditions taking into account many parameters, such as for instance the thickness of the air, the viscosity of water or the quality of the light (ill. 8). There is a point where they can all interweave, and it becomes impossible to determinate if what is witnessed is the artefact of an image production or a visual presence. Part of *Rio Vàn Eir*'s recons play on this indistinguishability between what is observed and the observing protocol linking them into one single continuity that brings forward the operations of the gaze. In these various qualities of views and imaging apparatus, the scale ratio has to be taken into account because it interferes greatly with what is observed. A glaring example is the fact that if one's willing to film on the riverbed: the size and shape of the camera will necessarily transform the water flow and thus the locations modeling process impacting the interactions of water and sand (ill. 9).

45 Sicard 2010, 121.

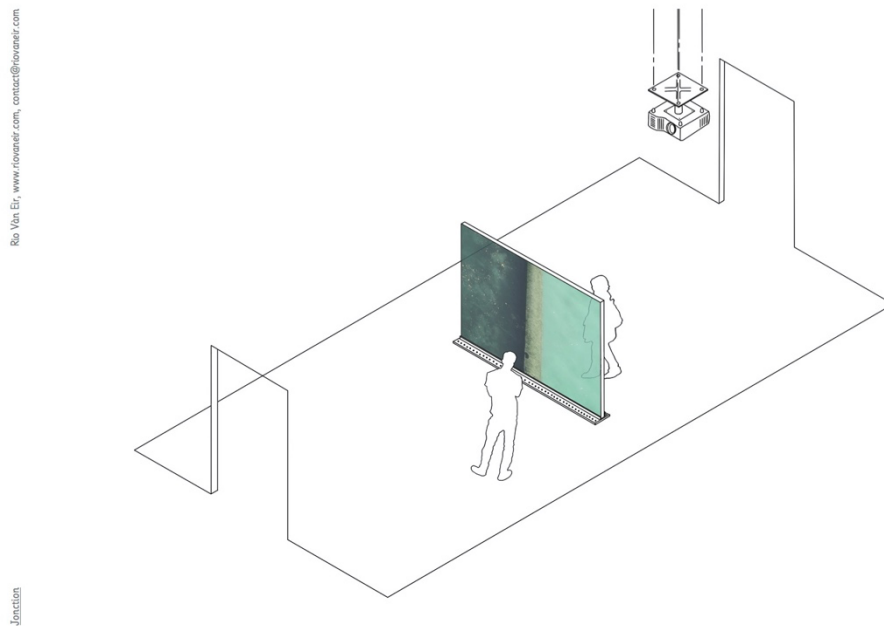


III. 8: Rio Vàn Eir, *Texture recon*, 2018, still frame, © Rio Vàn Eir.



III. 9: Rio Vàn Eir, *Riverbed recon*, 2018, photograms strip, © Rio Vàn Eir.

Finally, as a video installation artist, much of the work of seeing things differently has to do with how these images produced by Rio Vàn Eir are shown and distributed (ill. 10). This distribution defines what quality of attention these images will get in which context. For Rio Vàn Eir, the exhibition space (that should not to be reduced to the museum) with its opened temporality and its numerous points of view is a remarkable ethnographic tool giving both space and time to operate on. It can work as place to reproduce, reconfigure or to de-construct what has been recorded and how it is contextualized. Installation provides space for the audience to reclaim and study his image production in a new appropriate space.



III. 10: Rio Vàn Eir, *Jonction*, 2013, installation diagram, © Rio Vàn Eir.

### To conclude

This text is the result of a contextualized visual culture researcher's approach and an artist's practice. This implies that we sometimes focus on different aspects depending on what we respectively find the



most significant on the impact of nature representations. If the concepts of strategical emptiness and of porosity may seem close to each other because they both refer to emptiness and imply the idea of a “gap”, they are actually opposed through the visuality they induce. The former brings standardization and evidence, erasing the other possible discourses as it was visible in the most of collection of the art museum. Strategical emptiness works with the separation of spaces and isolates the actants in enclosed areas. On the other hand, porosity offers to look at the continuity, playing with scales and observing how data gathering interacts with the time and the space of the zones observed. In other words, porosity allows continuity. It is visually materializing the interactions and the continuum between the fur of a boar and the bark of the trees that is regularly scratched on. The working process of the imaging apparatus applied on different scale levels and presented side by side during an exhibition fills in the gaps of emptiness by constant and diverse visual experimentations. It has both a conceptual and a practical aspect and can be used by artists as a tool to observe and to interrogate the environment representations and conceptions.

Today, the visuality of strategical emptiness is still strongly implemented in most of the western representations of the environment. As the Museum collection illustrates, these representations are intrinsically linked to the way humanity imagines its relation to environment and its behaviors within it. Fortunately, many fields like geography, biology, art history and philosophy are in the process of rethinking their approach and questioning their bias. Doing so they impact the visual production, as we observe with Rio Vàn Eir who participates to this discussion with his work. With this text, we hope to contribute to this change with concepts like strategical emptiness and porosity that can help to rethink the processes of visuality.

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## Illustration table

III. 1 Lorenz Justin Ritz, Portrait de l'ingénieur, Ignace Venetz, (ca. 1826), oil on canvas, Musée d'Art du Valais, Sion.

III. 2 Raphael Ritz, Ingénieurs dans la montagne, (ca. 1870), oil on canvas, Musée d'art du Valais, Sion.

III. 3 Corinne Vionnet Matterhorn, Photo Opportunities 2007, photography, Musée d'art du Valais, Sion. © Adagp, Paris, [2007].

III. 4 Marie Velardi, Vue sure le Cervin, face Nord-Est, en 2015, Vue sur le Cervin, Face Nord-Est, dans 40'000 ans, Vue sur le Cervin, face Nord-Est dans 500'000 ans, 2015, drawing on paper, Musée d'art du Valais, Sion.

III. 5: Rio Vàn Eir, Jonction, 2013, still frame, © Rio Vàn Eir.

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III. 8: Rio Vàn Eir, Texture recon, 2018, still frame, © Rio Vàn Eir.

III. 9: Rio Vàn Eir, Riverbed recon, 2018, photograms strip, © Rio Vàn Eir.

III. 10: Rio Vàn Eir, Jonction, 2013, installation diagram, © Rio Vàn Eir.

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# **Mediating the Critical Zone. Land Art in the Perspective of Image Studies: Michael Heizer, Robert Morris, Robert Smithson**

Michael Rottmann

## **Abstract**

A key problem of researching the Critical Zone (CZ) is the problem of mediating the CZ: Common visualisations are insufficient, keeping the gap to the experience being in the CZ. In American Land Art around 1970, when an ecological and geopolitical thinking was circulating, one can make out an analogy: The artworks were intended to be received on site, but they were also made accessible by visual media – the crux of Land Art. Against this background I want to focus on Land Art in a perspective of image studies, supposing that Land Art ›treated‹ the problem of mediating the CZ *avant la lettre*. I want to show in this art historical case study: that the CZ was not only digged, drilled or even blown up when land was transformed into art, but also could be experienced on site. In addition, the CZ was mediated and the (epistemic) conditions of this were reflected, especially the tension between processes and static media. In return, and that is my claim, artistic mediations were developed. This all was embedded in a broader discourse of visibility, which will be traced back to Minimal, Serial and Conceptual Art. The ambivalent role of machines and technology will be considered *en passant*.

*Not to Touch the Earth**The Doors (1968)*

## Introduction: Down to Earth

In 1975, Robert Morris described in retrospect his search for the linear drawings<sup>1</sup> in the earth of the Nazca-culture (200 BC–600 AD) in Peru, among them “figures of animals”<sup>2</sup> and “geometric forms”:

Long climb up to the Pampa Colorado. Five hundred square kilometers of tablelands where they drew the lines. Bounded by Palpa and Nazca. Two oases. Mud and ripe fruits. Wet earth equals life. Water pots with erections for spouts. Impregnating the desert.<sup>3</sup>

In the soil, the geoglyphs as something relief-like, three-dimensional<sup>4</sup>, following the curved geometry of the earth’s surface. The soil was described by Morris as the habitat and livelihood of the Nazca.<sup>5</sup>

When the artist located the geoglyphs in the desert of Peru and wanted to grasp one of them while walking around, he found himself in an unfavorable, actually paradoxical situation: He was too close to the image – a tremendous “geometric rectangle”<sup>6</sup> – to see it as a whole. He experienced certain effects of *perspectiva naturalis* like distortion (some of the lines are about 20 km long).<sup>7</sup>

Looking at it in that way, with the walkable drawing happened to him, what had been treated about ten years before in the discourse

1 Morris speaks about “markings”. Morris 1975, 27.

2 Ibid.

3 Ibid., 26.

4 Cf. *ibid.*, 27.

5 “For the Nazcans, all things concerning life were to be found at the surface of the earth or just below it: the irrigation ditch, the crop, the adobe for building, the clay for utensils.” *Ibid.*, 33.

6 *Ibid.*, 27.

7 Morris wrote: “I got out of the car and walked toward this shape for about a quarter of an hour. I seemed to approach no closer and realized the deceptiveness of distances in the immense space stretching away to the southwest. It was possible, however, to see that the shape was trapezoidal; its narrowing in the western direction seemed too extreme to be a result of perspective.” *Ibid.*

of visuality of Minimal Art<sup>8</sup>: Seeing an object is a question of the relative position to it. It has been the same Robert Morris, who had introduced phenomenology in the discourse and investigated with sparse, geometric objects (*L-Beams*) the role of the position of the viewer and thus qualified the role of the form.<sup>9</sup> The tension of a ›lokal and ›global reception, evoked by big objects, could be experienced with the very long ones by Carl Andre like *Lever*.<sup>10</sup>

That dilemma Morris experienced intensified in Peru: Close to the geoglyphs he received the place, but not the image, from a distance the image, but not the place. That's why Morris recommended a certain "naval air field"<sup>11</sup> and the view from above. He explained:

Aerial photography returns us to our expected viewpoint. Looking down, the earth becomes a wall at 90° to our vision. We see them in that familiar elevation which reveals to us every cultural artifacts from buildings to artworks to photograph to the print on this page.<sup>12</sup>

Here addressed is the production of flat media – Sybille Krämer speaks about the "cultural technique of flattening"<sup>13</sup> – and its reception. Images were made traditionally by using central perspective (*perspectiva artificialis*). Still in the 20th century, following Morris, art would be driven by a kind of "Cartesian projection"<sup>14</sup> thus the "visual experience" would be limited by a "vertical plane interposed between the viewer and the world".<sup>15</sup> And he added: "Seeing is directed straight out, 90° to the wall or at an object never far from a wall."<sup>16</sup> This model of vision has become paradigmatic and been questioned

8 Cf. Rottmann 2020.

9 Cf. Morris 1995, 101-103.

10 This tension of seeing an object from a distance or very close played also a role for Jasper Johns, Barnett Newman and Donald Judd. Cf. Ehninger 2013.

11 Morris 1975, 31.

12 Ibid.

13 "Kulturtechnik der Verflachung". Cf. Krämer 2016, 15.

14 Cf. Morris 1975, 33.

15 Cf. ibid.

16 Ibid. One could agree for the 1970s, before VR and the CAVE spread. The question of the direction of sight, especially vertical or horizontal, was a topic in the arts in the 1960s. Cf. Rottmann 2020.

again and again, especially by modern art (like Cubism or Futurism).<sup>17</sup> In his film *Mirror* (1969) Morris himself holds up a mirror to the viewer.<sup>18</sup> It appears like a replica to Brunelleschi's Florentine mirror-experiment<sup>19</sup>: While once the mirror image of the panel painting and the environment (architecture) coincided, in the film the difference of the mirror image (natural image) and environment (landscape) shows the technical and human influence in the making of this complex visual structure (Sichtbarkeitsgefüge) inside of a camera image (technical image). This calls the general problem of the image (Bildfrage) and that one of depicting landscape.<sup>20</sup>

Concerning the geoglyphs, the view from above, to keep on following Morris, brings back the viewer in the right, for him familiar position – even though in a considerable distance – and provides overview.<sup>21</sup> The view from above, which is so typical for cartography<sup>22</sup>, was practised in 1975 also by science. Experimental-archaeologist Jim Woodman flew with his balloon *Condor I* over the plateau of Nazca, to confirm his assumption, that the geoglyphs are to be received only from a bird's perspective.<sup>23</sup> There was a controversial, if one needs flying machines or could just look from the hills around. Anyway, the aerial photography – Morris mentioned that one of Paul Kosok (1941)<sup>24</sup> – transformed the geoglyphs into small-sized, transportable, durable and clear image media; with Bruno Latour one

17 Crary showed with the example of the camera obscura that there was already in the early 19th century a break. The awareness of the viewer and the conception of seeing shifted towards subjectivity. Cf. Crary 1996.

18 Also in 1969 Smithson dealt in *Mirror Displacements* with the difference of a place and its image.

19 Cf. Edgerton 2002.

20 Cf. Boehm 1994; Staatsgalerie Stuttgart 2005.

21 But the visual experiences when flying an airplane lead the Futurists to overcome traditional central perspective. Cf. Lampe 2013.

22 Cf. Casey 2005, XV.

23 Cf. Woodman 1977.

24 Cf. Morris 1975, 33.

could call it today “immutable mobiles”<sup>25</sup>. Long since the geoglyphs were captured by satellites<sup>26</sup> (Fig. 1), as Robert Morris indicated<sup>27</sup>.

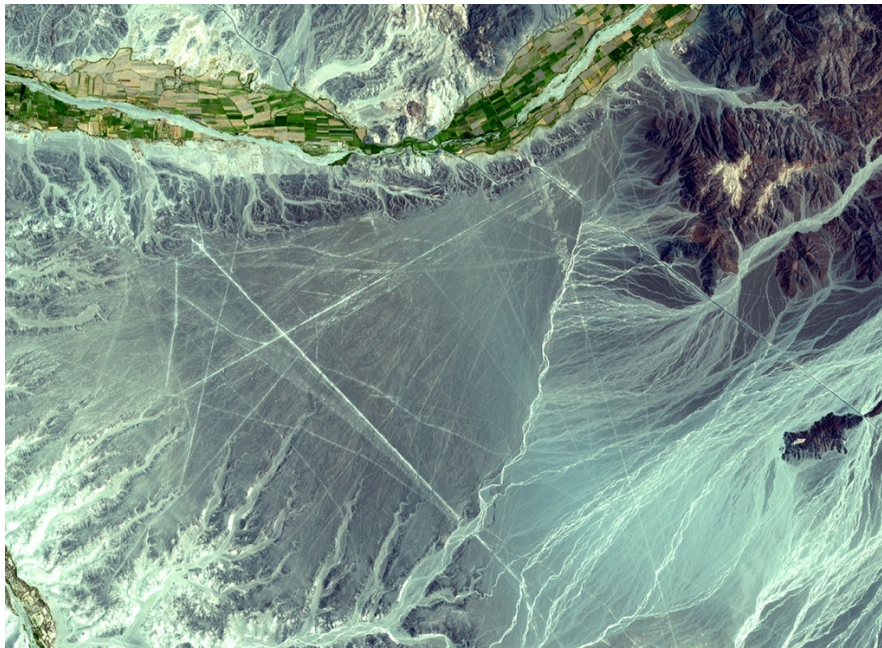


Fig. 1: Satellite-image of Nazca-lines, region of Pampa, Peru, 14 x 18 km (22.12.2000)

So where does this story of Morris lead us to?

Without doubt the geoglyphs of Nazca do not belong to Land Art in the sense of art history. And Morris shall here – although it would be interesting – not be introduced as a Land Art-artist. It is a crucial aspect, that his travel-reflections are considered as a comment to Land Art.<sup>28</sup> They remind us, that prehistoric artefacts and archaeology had been sources of inspiration. And they contain more suitable ingredients, which bring us into line: the view from above, the aerial

25 Cf. Latour 1987, 227.

26 The relation of closeness and distance, which is in traditional maps determined by scale and structure, would become disbanded with it. Cf. Hoppe-Sailer 1997, 208.

27 Cf. Morris 1975, 33.

28 Cf. Schramm 2014, 32–38.

photography<sup>29</sup>, which was seen by Lucy Lippard as a bridge between art and science and image and map<sup>30</sup>, the natural seeing and the one based on mediatechnology, the transformation from 3D to 2D, technological aspects and finally the soil as a living space. Last, but not least, a special problem became evident: the discrepancy between something and its mediation, in particular the experience of a place and its image – the crux of Land Art.

Just this problem diagnosed Alexandra Arènes, Jérôme Gaillardet and Bruno Latour concerning the Critical Zone (CZ). Usual scientific visualisations would be deficient: (1) Macro vs. micro: With the pure view of the surface (from a distance) a lot becomes “invisible”<sup>31</sup>; especially in a “planetary view” the relatively small CZ fades from sight; (2) Place vs. process: A cartographic image could represent static “*places*”, but not “[geochemical] *cycles*”. So, the team developed a new method, called “Gaia-graphy”, to visualise the networked processes running in the “layers from the top of the canopy to the mother rocks”<sup>32</sup>.

Even though in Land Art were mediated rather superficial views of places – the term CZ was not introduced before the early 2000s – exists a certain analogy, which I want to use as an opportunity to take a look at Land Art in a perspective of images studies and the problem of mediation hereafter.<sup>33</sup> In doing so I will continue to use the benefits of historical references to Minimal and Conceptual Art.

At first Michael Heizer’s *Double Negative* and Robert Smithson’s *Spiral Jetty* will be introduced<sup>34</sup>, using the pictorial conceptions to demonstrate exemplarily how the CZ could be experienced on site. In a second part I want to reconstruct the mediation of Land Art, its

29 Cf. Boettger 2002, 71-102.

30 Cf. Lippard 1986, 56.

31 They made out a gap between the “lived experience of being situated in the CZ and the image provided by the planetary view”, especially the “the images they [the researchers] give of themselves to the public and to the other disciplinary fields with which they collaborate.” Cf. Arènes et al. 2018, 3 seq.

32 The term “Critical Zone” describes “the (mostly continental) layers from the top of the canopy to the mother rocks [...], where life has modified the cycles of matter by activating or catalyzing physical and chemical reactions.” Arènes et al. 2018, 2.

33 Referring to Schramm 2014.

34 Both artists were friends since 1967. Cf. Cooke 2005, 59.

problematic nature and the examination of it. I suppose there existed a historical situation in fine arts, in which the difficulty of mediating something like the CZ was thought about. Finally, I want to explain artistic strategies of Heizer und Smithson, which responded to the problem of mediation. This will happen in particular with the cartographic knowledge of the artists.<sup>35</sup> (Bruno Latour himself mentioned, that arts – like in the past – could provide alternatives and stimulations.<sup>36</sup>) Associated with it, attention should be turned to the relation of Land Art and technology.

It is remarkable, that Land Art was constituted just at a time when mankind left the earth – on the base of technology<sup>37</sup> – and could have a look from outside for the first time (keyword: *Blue Marble*). One could speculate: In an affirmative sense, resulted the popular space travel in a going to »extraterrestrial« places like the desert. In a critical sense a recollection and checking up could be diagnosed.<sup>38</sup> This goes well together with the description of the map as *the* “medium of self-assurance”<sup>39</sup>.

### 1. Treating the CZ

Around 1970 created Michael Heizer with *Double Negative* (1969) and Robert Smithson with *Spiral Jetty* (1970)<sup>40</sup> two monumental icons of Land Art (Fig. 2; 3) Both are seen as being prototypical, because they are huge and have to be experienced ideally on site and with the body. Smithson called the specific place in the real space outside, where one has to go, “site”<sup>41</sup>.

35 And that is why I did not focus on Bio Art.

36 He speaks about “cosmography”. Arènes et al. 2018, 5.

37 Smithson made out “some kind of escape” from the “earthly prison” necessarily based on “technolgy” and “some kind of relevance”, but all in all a questionable operation with a bad media performance. Cf. Baker 2005, 160.

38 Hoormann saw a movement against space travel. Cf. Hoormann 2007, 87.

39 Cf. Folie 1997, 9.

40 Cf. Rubio 2012.

41 Smithson: “The site, in a sense, is the physical, raw reality – the earth or the ground that we are really not aware of when we are in an interior room or studio or something else like that [...]”. Und: “The site is a place you can visit and it involves travel as an aspect too.” Smithson 1970, s. p.

*Double Negative* consists of two cuts, each with a width of 9 meters and a depth of 15 meters, at the edge of the boarder of the desert-like plateau Mormon Mesa in Nevada. If one understands the negative form in the sense of Heizer as “one single form”<sup>42</sup>, then a gigantic ›bar‹ with a total length of about 450 meters is lying ›diagonally‹ to the natural topography. To put it simply, the artwork is defined by something, which is no more: With excavators, bulldozers and explosives 240.000 tonnes of rock were removed.<sup>43</sup> As well Robert Smithson’s<sup>44</sup> *Spiral Jetty*, a path made of stones in the sort of a spiral peninsula<sup>45</sup> in the Great Salt Lake at Rozel Point in Utah, was built with the aid of heavy equipment and machines, out of 6.500 tonnes of basalt rock and earth.<sup>46</sup> In Land Art the earth has been understood as a canvas or sculpture.<sup>47</sup> The CZ was ›treated‹: It was digged, drilled<sup>48</sup> and even blown up<sup>49</sup>.

With these massive, as well as insensitive operations – one tends to call the cliché of the creating, male artist –, which were captured and published with photographs and films, the question of the relationship of nature and technology came up.<sup>50</sup> Asked for it, Heizer diagnosed in retrospect a “schizophrenic period”<sup>51</sup>, because it would be both technological and primordial, what ought to be reflected in arts. Smithson mediated by suggesting that technology (like tools and machines) would be not only “›extensions‹ of man”<sup>52</sup> in the sense of Marshall McLuhan’s anthropomorphism, but also “aggregates of elements of the earth” in the end.<sup>53</sup>

42 Cf. Brown – Heizer 1984, 16.

43 Cf. Brouher – Koshalek 1991, 10.

44 Or Richard Long. Cf. Geiseler 2003.

45 Michael Lüthy showed that the built jetty was modified to a spiral jetty. So he argued that the drawings must be done afterwards. Cf. Lüthy 2012.

46 Cf. Cooke 2005, 53; Smithson 2005, 8.

47 Cf. Reißer – Wolf 2003, 219.

48 Walter de Maria drilled in 1977 his Vertical Earth Kilometer.

49 Explosions happened also in the desert of Nevada in the context of military nuclear tests and Jean Tinguely’s Study for an End of the World (1962). Carl Andre suggested a group project with explosions. Vgl. Smithson 1979b, 93.

50 Cf. Hoormann 1996, 43-49.

51 Cf. Brown – Heizer 1984, 13.

52 Simple tools would evoke a “look of destruction”. Cf. Smithson 1979c, 82.

53 Similar to Gilbert Simondon. Cf. Simondon 2012.





Fig. 2: Michael Heizer, *Double Negative* (1969), top: view to west; bottom: view to east



Fig. 3: Robert Smithson, *Spiral Jetty* (1970)

The relationship of Land Art and ecology must be considered as ambivalent. Without doubt there existed an awareness for it, but it was not made an explicit subject in the artworks presented here. Robert Smithson, who was a connoisseur of mineralogy, geology and metallurgy, was speaking in the early 1970s, when the Club of Rome reminded *The Limits to Growth* and the Gaia-hypothesis<sup>54</sup> circulated, explicitly of soiled lakes as well as deserted mines and plead for the potential of mediation of arts between ecology and economy.<sup>55</sup> In particular Land Art could serve for »recycling«<sup>56</sup>. But he refused a collaboration with uncritical engineers believing in progress and the absorption and instrumentality of arts by sciences and politics.<sup>57</sup> Heizer remembered that he was plagued by the “nuclear era”<sup>58</sup> and the “end of the world”. He was criticised that his operations were unjustifiable concerning ecology.<sup>59</sup> An interest in “landscape” as an end in itself he negated.<sup>60</sup> So his so-called *Negative Sculptures* dealt not with negative effects on landscape, but for example with the relation of positive and negative forms, how it has happened before in his *Negative Paintings*<sup>61</sup>. This was prepared in Minimal Art. Donald Judd made with his *Stacks*, *Progressions* and *Boxes* negative volume visible and activated surrounding space. Carl Andre created in his *Cuts*, a kind of “negative sculptures”<sup>62</sup>, positive-negative-forms on the ground. He

54 The idea of the earth as a living creature in the sense of a dynamic system with selfregulation was thought up in the 1960s by Lynn Margulis and James Lovelock. Cf. Lovelock 1991.

55 Cf. Smithson 1979a, 220; Hoormann 1996, 91 seq.

56 “One practical solution for the utilization of such devastated places would be land and earth recycling in terms of ‘earth art’.” Smithson 1979a, 220. Cf. Hoormann 1996, 91 seq.

57 Cf. Smithson 1996c, 369. Cf. Buchmann 2007a, 120.

58 He also explained that his land in Nevada, close to a military testing area, is contaminated. Cf. Brown – Heizer 1984, 11, 16.

59 Cf. Hoormann 1996, 45.

60 Cf. Brown – Heizer 1984, 11, 16.

61 For negation in American art around 1960 cf. Rottmann 2019.

62 Waldman 1970, 8.

pursued a sort of complementary concept: With bringing in an object, he defined the surrounding space.<sup>63</sup> He called it: a “cut in space”<sup>64</sup>.

This brings us back to the case studies of Land Art. It shall be shown now that the experience of the CZ is included in their image-conceptions.

## 2. Experiencing the CZ (*in* and *on* the Picture)

Concerning the experience of the image in *Double Negative* one sees – similar to Carl Andre’s *cuts* – actually “nothing”, the negative form exists only in the mind of the viewer.<sup>65</sup> Following Heizer one has to join together three parts, therefore also the “void[ ]”<sup>66</sup> between the two cuts. With respect to this it was suggested that the view from above offers an overview as an advantage in comparison with Heizer’s intention to receive the piece from the ground.<sup>67</sup> The form would be induced by its environment.<sup>68</sup> Very similar Sol LeWitt had worked in *Floor Structure* (1963), in which a smaller horizontal cuboid form comes through a bigger standing vertical one so that a part of it becomes hidden, but imaginable. He also aimed at an imagination induced by a previous knowledge, when he buried a cube (*Buried Cube*) and thus withdrew his visibility from it. Georges Didi-Huberman developed later an image-conception of an imagination induced by absence in a dissociation of Minimal Art: In that way the tautological seeing differs from the seeing of a believer, who is standing in front of a sarcophagus, by imagining the erstwhile body.<sup>69</sup> In an interplay of seeing and knowing observing becomes self-reflexive.<sup>70</sup>

63 It would be interesting to compare Heizers *Double Negative* with Piero Manzoni’s *Base of the World* (1961).

64 Bourdon 1966, 15. As cited in: Waldman 1970, 8.

65 Cf. Schramm 2014, 62.

66 Cf. Brown – Heizer 1984, 36.

67 Cf. Schramm 2014, 99.

68 Cf. Brown – Heizer 1984, 15.

69 Cf. Didi-Huberman 1999, 19-32.

70 Cf. Schramm 2014, 58.

The same goes for *Double Negative*, which thus can be linked to the historical discourse of image and visibility.<sup>71</sup>

Heizer was interested in a continuous, active seeing<sup>72</sup>, for *Double Negative* he mentioned a 24-hours reception<sup>73</sup>. One can not only pace it out and explore it, one has to; Rosalind Krauss characterized this special quality in the *Expanded Field* of sculpture with “to be in it”<sup>74</sup>. Inside the ditches the walls open up visual axes. They enable a change of view into the environment, whereby place and landscape become linked and the size of the ditches gets relativised.<sup>75</sup> It is a crucial aspect that the walls also limit the view. Krauss argued in that way the viewer would be thrown back on his own body.<sup>76</sup> But it seems that there is less focusing on a (psychological) body-self-awareness like in Robert Morris’ *Passageway* (1961) or *Box for Standing* (1961), in which very limited spaces could be experienced.<sup>77</sup> I want to claim that the walls provoke a closer examination of themselves: the trained viewer of art – to remind Robert Morris – looks frontal at (objects on) a wall.

Looking at it in that way *Double Negative* appears like an archaeological “excavation[.]”<sup>78</sup>; by his father, anthropologist and archaeologist Robert F. Heizer, the artist was familiar with it. Cutting the soil reveals his “memory”.<sup>79</sup> Like in a quarry strata become visible (Fig. 4). According to research literature natural historical processes were visualized<sup>80</sup> in Land Art and geological processes like weathering played a role<sup>81</sup>. Heizer once explained that mediating the “structural characteristics”<sup>82</sup> of a material would be more important than its beauty and

71 Cf. Rottmann 2020.

72 Heizer preferred “abstractions”, “as a way to focus and to see”, because: “Pictures stop my vision as soon as I recognized the content.” Brown – Heizer 1984, 33.

73 Cf. Rosen 2005, 63-66.

74 Krauss 2001, 280. Here cited: Schramm 2014, 59.

75 Cf. Schramm 2014, 58-62.

76 Cf. Krauss 2001, 280.

77 One could also refer to works of Richard Serra and Bruce Naumann.

78 Cf. Brown – Heizer 1984, 8, 33.

79 Cuts can be found also in geometry and in architecture (multiview projection).

80 Cf. Hoormann 1996, 43 seq.

81 Cf. Reißer – Wolf 2003, 220.

82 Cf. Brown – Heizer 1984, 14.

earth owns in this regard a special potential.<sup>83</sup> Meanwhile the rocks erosion has continued. Both Land Art-projects are part of the CZ. They are subject to natural change through the ages, based on chemical, biological, geological and physical processes and combinations of it. Heizer explained:

Many negative sculptures I built in the late sixties were inundated with water because they were built on dry lakes that flooded in the spring and winter or were eroded by wind. These works were photographed in this condition. They were extended and developed by natural forces, both physically and intellectually, beyond the "completed" state I had left them. I never planned this change, but I accepted it. It was an accelerated aging process that all materials eventually undergo. To me the climatic alterations were instructive and indicated a way to put more life into a sculpture. In making a sculpture outside, one can take two positions; reject and ignore climate and its effects by designing protections, or incorporate erosion through precipitation, wind, dust, and dirt. To modulate through weather is natural.<sup>84</sup>

Concerning *Spiral Jetty* the red colour of the salt lake, produced by bacteria, varied, the salt crystallized, foams and froth came up (Fig. 5), how Smithson himself described.<sup>85</sup> It shall only mentioned here that also the concept of "entropy"<sup>86</sup> was addressed and an artform unlike Minimal and Serial Art, which could not be represented by numbers and received by rationality, was pursued.<sup>87</sup> Whether from the ground or from the air, *Spiral Jetty* was made for a kinesthetic perception, to grasp it in its totality and complexity.<sup>88</sup> Smithson himself ran over it and flew over it again and again, also to produce his photographs and film. In particular when walking on the spiral way of stones, which defines possible positions of view, the processes of the CZ can be experienced. Smithson has been interested especially in processes of decomposition.<sup>89</sup>

83 Smithson was interested in "geological phenomena". Cf. Smithson 1970, s. p. One has to consider, by transforming a place into an artwork the material is no more seen only as material, but also its color, its form and its toolmarks (Gemachtsein).

84 Cf. Brown – Heizer 1984, 26 seq.

85 Smithson talked especially about "masses of cells consisting largely of water, proteins, lipoids, carbohydrates, and inorganic salts." Cf. Smithson 2005, 9-11.

86 Cf. Smithson 1979d, 9.

87 Cf. Smithson 2005, 9 seq.

88 Cf. *ibid.*

89 Cf. Reißer – Wolf 2003, 223.





Fig. 4: Michael Heizer, *Double Negative* (1969), interior view



Fig. 5: Robert Smithson, *Spiral Jetty* (1970)

It was Carl Andre who established the walkable sculpture earlier.<sup>90</sup> In 1967, following Smithson, he covered the ground of Dwan Gallery in Los Angeles regularly with “rectangular, sunken islands”<sup>91</sup>, thus with a walkable “map”.

The peninsula *Spiral Jetty* sunk from 1971 to 2002 under the grown water-level and became a kind of invisible.<sup>92</sup> (Nowadays this reminds us to the rise of the global sea level.) That’s also a reason why the work became prominent primarily by media and less by direct experience.<sup>93</sup>

### 3. Mediating the CZ

In general Land Art was mediated foremost – to say it with a tautology – via media, not least because the journey to the projects is exhausting, time-consuming and cost-intensive.<sup>94</sup> *Spiral Jetty* could be received as photograph or film *Spiral Jetty* (1970) as well as text *The Spiral Jetty* (1972), drawing, diagram or map. For this reason, it is a prime example for the plural mediation of Land Art. These media were shown in exhibitions like *Earth Works* (1968) in the New Yorker Gallery of Virginia Dwan, which was curated by Smithson, or *Earth Art* (1969) in the Andrew Dickson White Museum of Art (Cornell University) in Ithaca (NY).<sup>95</sup>

If these media would have been arranged in the context of science and usable, one would talk about “immutable mobiles”. It was realised a visuality of Land Art, especially in the “urban desert”<sup>96</sup> New

90 When he checked the dimensionality of sculpture and laid out flat sheets of metal as walkable “carpets”. One could also mention here Fred Sandback, Jackson Pollock (Drippings) and Andy Warhol (Dance Diagram).

91 Smithson 1996a, 92.

92 Cf. Cooke 2005, 53.

93 Cf. *ibid.*

94 Land Art could be seen as elitist. Heizer replied that people reach farthest destinations, visiting the Mona Lisa in Paris or the Gizeh pyramid in Egypt. Cf. Brown – Heizer 1984, 42.

95 In Germany “Land Art” was broadcasted for the first time in a TV-exhibition (in the show Fernseh-Galerie-Berlin, Gerry Schum, Land art) by Sender Freies Berlin (SFB) and since that the term spread. Cf. Reißer – Wolf 2003, 219.

96 Smithson 2005, 11.

York, and a “re-integration”<sup>97</sup> in the art world. This was contradictory as much as Land Art had claimed a reception on site and renounced the art system.<sup>98</sup>

Unlike Michael Heizer Smithson was interested in the transformation of site-specific works into site-related ones.<sup>99</sup> He called it “non-site”<sup>100</sup>, meaning the *displacement* of a *site* into the “abstract container”<sup>101</sup> of a showroom and the alliance of media, among them containers with collected soil samples and additional information.<sup>102</sup>

From this time on Land Art-projects could be received at different places<sup>103</sup>, but the more the discrepancy between an experience on site and its mediation as well as the – anyhow contemporary<sup>104</sup> – problem of media became precarious. This goes for traditional artistic media including film, which could at least mediate time-based processes, as well as soil samples. Smithson was also thinking about “tracks”<sup>105</sup> and track-producing animals “as a medium”. Especially in a synoptic alliance of media in a mutual way single media were exposed as specific and insufficient, as ›objects of imperfection‹ (Mängelobjekte). Media leave their marks on the content.<sup>106</sup> This ultimate problem of a gap between something and its medial representation treated Bruno Latour with the example of a piece of land, a forest in the Amazonas area, into a scientific paper combined with a “chain of transformation[s]”, developing his explanation-model of “circulating reference”<sup>107</sup> including a chain of reference.

The use of photography or film in Land Art enabled an aesthetisation and staging, especially a charging with the sublime what could

97 Cf. Schramm 2014, 86. (my translation)

98 Which was described as a myth and a perpetuating topos. Cf. Rosen 2005, 100 seq.

99 Cf. Brohl 2003, 14 seq.

100 Cf. Smithson 1970, s. p.

101 Ibid., s. p.

102 Cf. Brohl 2003, 13.

103 Cf. Schramm 2014, 20, 87.

104 Both Heizer and Smithson mentioned McLuhan. Cf. Brown – Heizer 1984, 10.

105 Cf. Smithson 1970, s. p.

106 A paradigm of media theory. Cf. Krämer 2008, 67.

107 Cf. Latour 1999, 53, 70.



imply disillusionment or even disappointment on site.<sup>108</sup> The difficulty of a so to say media-based mediation was discussed, reflected on and criticised in the historical discourse. Especially photography was regarded as ambivalent: It was used as a means of documentation, which could provide a proof of existence of temporarily projects, but at the same the capture and reproduction was exposed as inadequate.<sup>109</sup> With his collage *Photo as Fragment* (1969) Heizer made the conditionality of mediated events and the detail shot-style of its experience (“Ausschnitthaftigkeit”<sup>110</sup>) a subject, using the contemporary example of moon landing. A circumference boundary line on the sheet of paper became the moon only by a smallsize photograph of the moon, which seems to orbit the drawn moon like a satellite. (Also in space travel unknown places were mediated via images, maps and rock samples.<sup>111</sup>) In the same year Smithson lets the viewer retrace with nine photographs of temporarily *sites* in his *Mirror Displacements* (1969) the difference of an image and a place, which existed long ago.<sup>112</sup>

Against this background it seems that Smithson would revolve around a *site* with using diverse media in his *non-sites* – like it happened in Sol LeWitts projects since his *Serial Project #1 (ABCD)* (1966) with an idea – to confront the problem with an interplay. In this connection Christiane Brohl, who used the concept of *Displacement* for the benefit of art education, was talking about an “associative reading”<sup>113</sup>: A place could be read through different discourses, wherat new aspects could always be added due to a continuous process of correlation. In this direction also the film *Spiral Jetty* could be interpreted, in which Smithson extensively worked with cuts and montage and brought together construction works, aerial photographs and maps

108 Schramm 2014, 19, 27, 67-84.

109 Cf. *ibid.*, 106-112. Smithson described photography as problematic and threatening. It would call the past, but not correspond with experience. Cf. Baker 2005, 156. For Heizer cf. Brown – Heizer 1984, 42; Rosen 2005, 63.

110 Cf. Schramm 2014, 139.

111 Cf. *ibid.*, 141; Baker 2005, 160.

112 Cf. Schramm 2014, 128-138.

113 Cf. Brohl 2003, 15. (my translation)

amongst other things.<sup>114</sup> He explained: “These fragments of a timeless geology laugh without mirth at the time-filled hopes of ecology.”<sup>115</sup>

Smithson's dialectics of *site* and *non-site*<sup>116</sup>, which he developed for an investigation of the relationship between a real and mediated place<sup>117</sup>, once again shows: *The* place, which could be mediated, does not exist. It is already conceptualized and superimposed by a previous knowledge, which is often built by visual cultures.<sup>118</sup> Just like that the *site* would be represented by a *non-site*. At the same time the *non-site*, would change the reception of the *site*. Both would influence themselves in a perpetual style, so that they are converging and only thinkable together.<sup>119</sup> Like earlier art movements Land Art deals with the discrepancy between landscape and its representation with media. But different to earlier ones both production and reception were intended to happen outside.<sup>120</sup>

#### 4. Media-Strategies

With the following examples shall be demonstrated that Heizer and Smithson worked with artistic mediations of places, which could be understood – I want to suggest – as strategies.

For Smithson played maps a distinguished role.<sup>121</sup> In the 1960/70s the map could serve as an object of interest, because of its cultural,

114 The film also enables an interplay of different (geometrical) perspectives.

115 Smithson 2005, 13.

116 Cf. Smithson 1996b.

117 Which can be seen as a key aspect in his work. Cf. Brohl 2003, 13.

118 Schramm 2014, 26. Especially visual cultures pre-figure (“präfigurieren”) the reception of reality. This was made out at Olafur Eliasson's travels in Iceland. Cf. Meister 2007, 18.

119 “But I think there is really no discrepancy between the indoors and the outdoors once the dialectic is clear between the two places.” Smithson 1970, s. p.

120 It would be interesting to examine how Land Art differs from traditional landscape painting, especially plein air-painting.

121 Cf. Tiberghien 2001, 49-75. For the diverse roles of maps in Land Art cf. Schramm 2014, 153-167.

sociological and political dimensions.<sup>122</sup> In his essay *A Museum of Language in the Vicinity of Art* (1968) he sketched the history as well as the reception in arts and made out a growing abstraction and mechanisation:

From *Theatrum Orbis Terrarum* of Ortelius (1570) to the “paint”-clogged maps of Jasper Johns, the map has exercised a fascination over the minds of artists. A cartography of uninhabitable places seems to be developing – complete with decoy diagrams, abstract grid systems made of stone and tape (Carl Andre and Sol LeWitt), and electronic “mosaic” photomaps from NASA.<sup>123</sup>

It was Michael Heizer, who seized on the technique of the photographic mosaic, in which photographs (of satellites) were put together to gain bigger images or maps like it was done in the 1960s by military. Having been the camera-assistant of his father, “he soon learned to accept the no-nonsense documentary dispassion of this machine.”<sup>124</sup> Feeling a lack, Heizer also »revolved« around a site. He created “rotary photographs”<sup>125</sup> like *Circular Surface Planar Displacement Drawing* (1969), which enable a kind of 360°-view – sometimes done with a scaffold, to get a view from above and moved sixteen feet for each shot of his motorbike-tracks. “Actual Size photographs” were another approach, so that one could make out a tendency towards an immersive, body-related experience.<sup>126</sup>

The above-mentioned Jasper Johns had before – after his earlier *Map-Paintings* – seized on elaborated scientific mappings, namely the triangulated, folding Dymaxion-world map of Buckminster Fuller and this resulted in his *Map* (1967). This was explicitly mentioned by Smithson<sup>127</sup>, who established: “Maps are becoming immense, heavy quadrangles, topographic limits that are emblems of perpetuary, interminable grid coordinates without Equators and Tropic Zones.”<sup>128</sup>

122 The map was introduced even as an medium of deconstruction in the sense of Jacques Derrida, because it could reveal structures of the world. Vgl. Baldauf 1997, 30f; Brayer 1997.

123 Smithson 1996a, 92.

124 Cf. Wagstaff 1984, 72.

125 Cf. *ibid.*, 73.

126 Stimulated by technology. Cf. Schramm 2014: 138-140.

127 Smithson 1996a, 94.

128 *Ibid.*, 92.

In the end a map could – like in Lewis Carroll's *The Hunting of the Snark* – contain everything or nothing.<sup>129</sup>

Following Christine Buci-Glucksmann maps function always as projection-spaces (“Projektionsräume”<sup>130</sup>), which would mediate between the “visible-readable of the image” and the “invisibility of an existing, but absent world”. For Smithson the map was an object of projection in a double sense: As a “logical two dimensional picture”<sup>131</sup> he called it a “diagram”. Coming from a mathematical projection, the map serves also for imagination.<sup>132</sup> This opens up the map, which is actually just surface, into the three-dimensional (das Plastische) – and this helps for mediating the CZ. Smithson's creative activity shows that he pursued the transformation between 2D and 3D; he experimented with maps, created artistic maps, and widened his concept of maps. For his exchange-procedures between the flat and the spatial he could take up the ideas of Minimal Art. Robert Morris analysed:

Perhaps the most compelling aspect of Minimalism was that it was the only art of objects (aside from the obvious example of architecture) which ever attempted to mediate between the notational knowledge of flat concerns (systems, the diagrammatic, the logically constructed and placed, the preconceived) and the concerns of objects (the relativity of perception in depth).<sup>133</sup>

This can be related to Smithson's *Leaning Strata* (1968) (Fig. 6)<sup>134</sup>, which belongs to a series of white, abstract, geometric, three-dimensional objects, which were exhibited in March 1968 in the Dwan Gallery when his dualism of *site/non-site* become familiar to a broader audience firstly<sup>135</sup>. The artist combined two projection methods, by superimposing a linear perspective-grid and polar coordinates.<sup>136</sup>

129 Smithson refers to the anecdote of the earth as map of itself: Increasing the size leads to a 1:1-map. The cartographers realised that it would too big to unfold it, would cover the whole land and the sun light. So the “country itself” was used as a map, which worked very well. Cf. Smithson 1996a, 92 seq.

130 Here cited: Schramm 2014, 166. (my translation)

131 Smithson 1996b, 364.

132 Even the production of maps is touched by imagination. Cf. Glasmeier 1997.

133 Morris 1975, 39.

134 Reynolds 2003, 125.

135 Ibid.

136 Ibid., 127.

Both the exhibition poster and the *Drawing for Leaning Strata* (1968) are verifying this (Fig. 7).

Smithson also worked with »superposition« and combination of cartographic systems in *Map Fragment* (1967) (Fig. 8) and *The Hypothetical Continent of Lemuria* (1969).<sup>137</sup>

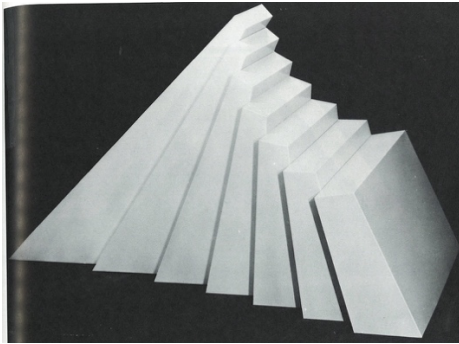


Fig. 6: Robert Smithson, *Leaning Strata* (1968)

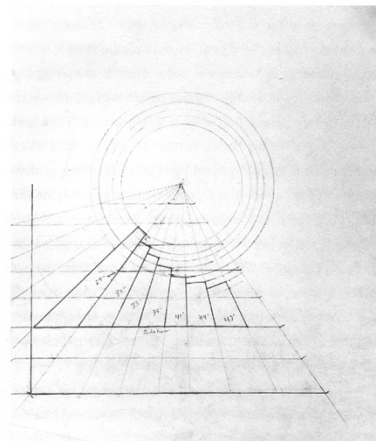


Fig. 7: Robert Smithson, *Drawing for Leaning Strata* (1968)

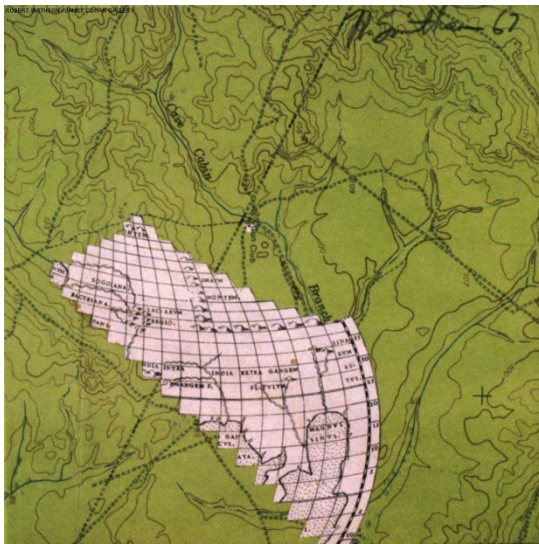


Fig. 8: Robert Smithson, *Map Fragment* (1967)



Fig. 9: Robert Smithson, *Untitled (Antarktis Circular Map)* (1967)

137 Cf. Brayer 1997, 30.

Moreover, he folded, cut and stacked maps, to made “maps as physical surfaces”<sup>138</sup> or “maps into three-dimensional sculptures”<sup>139</sup>. In *Untitled (Antarktis Circular Map)* (1967) he shifted cut elements to realise in a soft way illusionistic and factual three-dimensionality (Fig. 9). Like *Leaning Strata* (1968) his maps could evoke movement. This accumulation of different states of time reminds to the chrono-photography of Eadweard Muybridge, which was used as a basis by Sol LeWitt. When Smithson folded the map of Beaufort Inlet and Part of Core Sound, North Carolina for *Folded Map* (1967), he produced not only a “negative map”<sup>140</sup>, which refuses the possibility of representation, but also a certain three-dimensionality and dynamics based on strata like he did it in his objects *Glass Stratum* (1967) and *Untitled (Map on Mirror-Passaic, New Jersey)* (1967) with (glass) plates.<sup>141</sup> Transforming maps into three-dimensionality corresponds with Smithsons conception of *non-sites*, which he understood as “large, abstract maps made into three dimensions”.<sup>142</sup> He was speaking dialectically of: “Mapscapes or Cartographic Sites”<sup>143</sup>. I want to suggest, that these procedures were not only intended to undermine common functions and conventions of maps, how it was argued<sup>144</sup>, but also to search ways of extension.

The artists were aware that these procedures had side effects like information loss. They knew that maps are basically constructions; Smithsons friend and occasional co-author Mel Bochner had deconstructed cartography in his text *The Serial Attitude* (1967).<sup>145</sup> Actually the one and only map does not exist just as a loss-free mapping of the curved earth’s surface on a flat map (equal of angle vs. isometric).<sup>146</sup>

138 Reynolds 2003, 127.

139 Ibid.

140 Cf. Brayer 1997, 32. (my translation)

141 Cf. Reynolds 2003, 123-191.

142 Smithson 1996b, 364; Smithson 1970, s. p.

143 Smithson 1996a, 91.

144 Cf. Schramm 2014, 166.

145 Cf. Bochner 1967.

146 See Theorema egregium by Carl Friedrich Gauß. Mainzer 1980, 161.

### Conclusion

In Land Art the CZ and local processes could be experienced and were mediated. The difficulties and conditions of the mediation were reflected. Artistic mediation was developed: a pluralism of media, including soil samples, artistic maps, especially three-dimensional maps. The problem of mediating processes with static maps was dealt with – albeit there were no solutions concerning the CZ-problem diagnosed in science. It became clear, the site-specific experience of a Land Art-project, perhaps coupled with a sublime, romantic experience of landscape, is only thinkable with a technological dispositive (in the sense of Foucault). Planning and production of Land Art is based on production engineering (construction machines, blowing, digging) as well as cultural techniques like cartography. Its reception requires mobility and therefore media in the sense of McLuhan. Its mediation happens via technical media like photography and film. In particular its reception is based on a technical seeing: the view from above, aerial photography (of satellites).<sup>147</sup> In the sense of media-archaeology Land Art touches on an ideological charged complex. The First World War made a significant contribution to the development of aerial photography.<sup>148</sup> In the context of the Cold War the USA ran from 1959 to 1972 the military satellite-program *Corona* for information collecting.<sup>149</sup> Therefore art and military share the same project-space: the desert. 272 big calibration targets made of concrete were installed in and around Casa Grande (Arizona) to shape a 16 x 16 grid (256 pixel) for digital images. Artistic subjects like politics, control or globalization opens up, but weren't in the foreground in Land Art.

Today the right holder of Spiral Jetty, the Dia Art Foundation New York, uses satellite-technology, to store a daily picture of it in the internet – transforming physical into digital space (Fig. 10).<sup>150</sup> It seems – forgetting for a short moment the economical dimension –

147 Americans became familiar with satellites, in 1957 Sputnik I shocked the nation.

148 Cf. Schramm 2014, 148f.

149 Cf. Ruffner 1995.

150 <https://www.diaart.org/collection/spiraljettyaerials> (10.11.2018).



that the crux of Land Art, its difficulty of mediation and its connexion to military technology would be updated. Even with that digital chronology the CZ becomes mediated – now with a global range.



Fig. 10: Satellite image of *Spiral Jetty* in autumn 2017



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## Reference of Images

Fig. 1: Nazca-lines, region of Pampa, Peru, 14 x 18 km, NASA Terra satellite, 22.12.2000, image credit: NASA/GSFC/METI/ERSDAC/JAROS, and U.S./Japan ASTER Science Team; source: <https://www.jpl.nasa.gov/spaceimages/details.php?id=PIA11097> (27.02.2019). Courtesy NASA/JPL-Caltech.

Fig. 2: Michael Heizer, *Double Negative* (1969), two removals of 240,000 total tons of earth, rhyolite, and sandstone, each 1,476 feet x 4 1/2 x 29 feet 2 1/2 inches overall, Mormon Mesa, Overton, NV, Collection: Museum of Contemporary Art, Los Angeles; © Michael Heizer. Courtesy of the artist and Gagosian Gallery. Photo: Tom Vinetz.

Fig. 3: Robert Smithson, *Spiral Jetty* (1970), source: <https://www.diaart.org/visit/visit/robert-smithson-spiral-jetty> (10.11.2018).

Fig. 4: Michael Heizer, *Double Negative* (1969), two removals of 240,000 total tons of earth, rhyolite, and sandstone, each 1,476 feet x 4 1/2 x 29 feet 2 1/2 inches overall, Mormon Mesa, Overton, NV, Collection: Museum of Contemporary Art, Los Angeles; © Michael Heizer. Courtesy of the artist and Gagosian Gallery. Photo: Tom Vinetz.

Fig. 5: Robert Smithson, *Spiral Jetty* (1970), source: Cooke - Kelly 2005, 44.

Fig. 6: Robert Smithson, *Leaning Strata* (1968), Painted steel, 49,5 x 30 x 103 Inches, source: Hobbs 1982, S. 39.

Fig. 7: Robert Smithson, *Drawing for Leaning Strata* (1968), source: Reynolds 2003, S. 129.

Fig. 8: Robert Smithson, *Map Fragment* (1967), Map collage, 6 x 6 Inches source: [https://www.robertsmithson.com/drawings/map\\_fragment\\_cr\\_1000.htm](https://www.robertsmithson.com/drawings/map_fragment_cr_1000.htm) (30.12.2018).

Fig. 9: Robert Smithson, *Untitled (Antarktis Circular Map)* (1967), Cut map, diameter 19 5/8 Inches, source: [https://www.robertsmithson.com/drawings/untitled\\_antarktis\\_900.htm](https://www.robertsmithson.com/drawings/untitled_antarktis_900.htm) (30.12.2018).

Fig. 10: Satellite image of *Spiral Jetty* in autumn 2017, source: <https://www.diaart.org/collection/spiraljettyaerials> (10.11.2018). Photo: Aero-graphics, Salt Lake City. Courtesy Dia Art Foundation.

# **Interaction of Nature and Man after Ernst Cassirer: Expressive Phenomena as Indicators.**

Martina Sauer

## **Introduction**

According to the neo-Kantian and cultural anthropologist Ernst Cassirer, man always interacts with nature. This assumption forms the basis for his philosophical approach to the *Philosophy of Symbolic Forms* of 1929. It is based on the thesis that we do not conceive nature as objects ('Ding-Wahrnehmung'), but immediately feel and suffer nature through the so-called 'perception of expression' ('Ausdrucks-Wahrnehmung'). Thus, our understanding of the world is based on interaction with nature, because feeling and suffering depend on something we feel and suffer about. Thus, Cassirer developed already a theory of Enaktivismus, embodiment, and respectively to modern film theories of immersion. The thesis of the following paper is based on these findings of Cassirer and states that the expressive phenomena that we gain from nature through the 'perception of expression' can be understood as indicators of the state of nature.

It is therefore necessary to ask: what do we perceive of nature so that we suffer and, beyond that so that we can interpret what we have suffered as indicators of the state of nature? Cassirer gives us a first answer and concludes that there must already be something significant for us to respond. Here I agree with Cassirer that the perception

of nature as things does not provide relevant information about nature so that we behave appropriately and meet our needs.<sup>1</sup> So Cassirer already asked:

If there is "any possibility [...] to break through the layer of the simply symbolic or significative in order to find behind it the immediate, the unveiled world (...)" (Cassirer 1964 (1929), 27, translation into Engl., MS)<sup>2</sup>

Cassirer assumes, that the answer is not be found at 'outside' but only in our consciousness. (Ibid.) Therefore, Cassirer concludes it is obvious that even the highest form of consciousness, the conceptual understanding must depend on a form of perception prior to symbolic interpretation. In this regard he agrees with his opponent Martin Heidegger and thus distances himself from Kant, as far as there must be 'a free activity of mind', on which our understanding of the world is based. (Ibid., 14–15, see also the connection between Heidegger and Cassirer, Sauer 2014) With reference to this idea, Cassirer presented the concept of the 'perception of expression' ('Ausdrucks-Wahrnehmung'). (Ibid., chapter I–III, 53–121)

Behind this background and the thesis, the order of my paper follows four steps. First, the premise of the 'perception of expression' of man should be presented. Secondly, it is about showing the reason why expressive phenomena produced by man can be understood as indicators of the state of nature. Thirdly, it should be made clear why a process of distancing or alienating from nature nevertheless begins. Fourthly, finally, it is a matter of showing ways back to nature. In summary, I would like to conclude with a few words about the assumption that there is no dichotomy between nature and man.

1 Cf. the same conclusion of Whitehead in 2000 (1927).

2 Cassirer 1964 (1929), 27: "Wenn wir fragen, ob für das Denken „irgendeine Möglichkeit besteht, die Schicht des bloß Symbolischen und Signifikativen zu durchstoßen, um hinter ihr die „unmittelbare“, die entschleierte Wirklichkeit zu erfassen – (...)"

### I. Premise of the Perception of Expression – ‘Ausdrucks-Wahrnehmung’

Behind the background of the thesis and due to the topic of the anthology and its previous conference *Critical Zone* in Hamburg in February 2019, it is of interest how Cassirer defines the ‘perception of expression’. In this interest, it is remarkable that Cassirer does not rely on a theory of projection which had been invented by the Speculative Philosophy in the 19th century and here in particular by the German philosopher Friedrich Theodor Vischer, whose writings he knew. In concrete terms this means, that Cassirer neither assumes that man imposes a symbolic meaning on nature that suits him best, nor does he support the idea that the meaning is already determined by something higher e. g. laws of divinity.<sup>3</sup> (Ibid., 85) Finally, he also rejects the idea of Sensualism that our understanding of reality depends on materials preconditions, and is thus a copy of sensual data. (Cassirer 2007 (1944), 63) Contrary to these practices and theories, Cassirer, as it is said in the beginning, assumes that the feeling and suffering which characterize the ‘perception of expression’ depend on something we react and from which we cannot differentiate ourselves. (Cassirer 1964 (1964 (1929)), 95-96) In this context, Cassirer refers to man’s ability not only to react but to respond to their first perceptual impressions. These first perceptual impressions are, as he describes them, forms of movements and spatial forms; and these forms cannot be captured either linguistically or conceptually, but only by feeling their abstract-formal appearances as ‘characters or properties’:

“Instead of describing the form of movement as such, as the form of an objective spatial-temporal event, the state is named and linguistically fixed of which the movement in question is the expression. ‘Rash’, ‘slowness’ and, if necessary, ‘angularity’, Ludwig Klages says [...], may be understood in a purely mathematical sense, whereas ‘force’, ‘haste’, ‘inhibition’, ‘circumstantiality’, ‘exaggeration’ are just as much names for states of life as they are for movements, and in truth they are described by their *characters*. Those who want to characterize forms of movement and spatial forms are suddenly entangled in a characterization of soulful characteristics, because forms and movements have been *experienced* as soulful phenomena before

3 Cf. Vischer 1922 (1887), 1866, Cassirer 1923 (1921), Pinotti 2008: 129–132, see as well Sauer 2018.



they are *judged* by the intellect from the point of view of objectivity, and because the linguistic pronouncement of the concepts is only mediated by impressions." (Cassirer 1964 (1929), 94, italic fonts are locked in the original, translation into Engl., MS)<sup>4</sup>

As Cassirer describes it, our access to nature is characterized by different arousal patterns that characterize our feelings of 'spatial forms' and 'forms of movement'. Finally, when we realize the effects of different expressive sensations, they allow us not only to react but to respond properly. Cassirer himself never developed these thoughts into a clear concept of the perception of man, even when he has discussed its anthropological findings in various articles and books. It is therefore a concept so far barely noticed. Nevertheless, it is precisely today that the far-reaching conclusions that can be drawn from this approach are of general interest due to recent research. (Cf. Sauer 2008, and the comment from Wiesing 2009)

## II. Expressive Phenomena as Indicators

The conclusion to be drawn from this concept is that it is feelings which indicate people what is happening outside of them. They mirror the state of that what comes into contact with us. The verb 'happen' – in this case in quotation marks – signals the double effect of moving and spatial forms as well as our entire sensitive system, which transforms the former into feelings and finally induces actions as responses. The former is therefore indispensable not only for immediate reactions, which are also important for animals, but also for responses of man, which are concrete actions. Experience is therefore

- 4 Cassirer 1964 (1929): 94: „[...] statt die Form der Bewegung als solche, als Form eines objektiven raum-zeitlichen Geschehens zu beschreiben, wird vielmehr der Zustand genannt und sprachlich fixiert, von dem die betreffende Bewegung der Ausdruck ist. „Raschheit“, 'Langsamkeit' und zur Not noch 'Eckigkeit', so heißt es bei Ludwig Klages [...] mögen rein mathematisch verstanden werden; dagegen 'Wucht', 'Hast', 'Gehemtheit', 'Umständlichkeit', 'Übertriebenheit' sind ebenso sehr Namen für Lebenszustände, wie für Bewegungsweisen und beschreiben in Wahrheit diese durch Angabe ihrer Charaktere. Wer Bewegungsgestalten und Raumformen kennzeichnen will, findet sich unversehens in eine Kennzeichnung von Seeleneigenschaften verstrickt, weil Formen und Bewegungen als Seelenerscheinungen erlebt worden sind, ehe sie aus dem Gesichtspunkt der Gegenständlichkeit vom Verstande beurteilt werden, und weil die sprachliche Verlautbarung der Sachbegriffe nur durch Vermittlung von Eindruckserlebnissen stattfindet.“

different for humans than for animals. (Cassirer 1944, 49) In order to understand this, the process of perception, which Cassirer called ‘perception of expression’ (‘Ausdrucks-Wahrnehmung’) is fundamental. With regard to the human being, this kind of perception is based on two moments, namely feeling and response. The former is characterized by an unclouded unity of impressions and feelings and the latter by a distance when the feelings become conscious. The first part of the process can be understood as a mechanism of immediate reactions to perceptible expressive phenomena in nature, while the second part influences human decisions and actions. But contrary to the latter effect, the first was not further elaborated by Cassirer. But in view of my contribution to the anthology’s focus on the *Critical Zone*, the first is of basic importance. For it is the unity of feeling and responding that can be held as prerequisites for the unique development of man. On the basis of this conclusion, not only the connection between feelings and actions and thus events with historical and cultural effects becomes clear, but also their conditions, which are to be looked for in the interaction of human feelings and reactions to nature.

Looking back on Cassirer’s conclusions, which refer to the cultural development of man, he says that man only becomes aware of himself as part of this world through the feeling of his connection to nature, to others, and finally to himself, even if he simply forgets the premise. This means, consciousness is dependent on the “basic and primal layer of perception” (“Grund- und Urschicht der Wahrnehmung”) the so-called perception of expression (‘Ausdrucks-Wahrnehmung’) which is unconscious. (Cassirer 1964 (1929), 85–86, 94, 99–100, cf. Cassirer 2007 (1944), 55)

This connection of human consciousness with unconscious processes of perception is of essential importance for our understanding of the world. What we realize of the world is not given as a ‘thing’ that lies before us, but as “living effectiveness that we experience” (“als lebendige Wirksamkeit, die wir erfahren“, Cassirer 1964 (1929), 86) This becomes obvious by the fact that, if this connection did not exist, we would not understand much – perhaps even nothing

– of that what encounters us in the world. This effect will be illustrated by an example: With regard to the last summer in Germany (2018) it can be declared that when at that time of the year the sun was shining brightly and hotly from the sky into the front yards, and the surrounding meadows of the villages have been earthy brown-yellow and short, these phenomena could not provide any sustainable information about nature. For pure observation and the nameable state of nature give us no impulse for action. In contrast, it is obvious, that only the feelings of heat and drought allow us to have a deeper knowledge about the state of nature and our room for maneuver, be it as a first reaction to look for shadow.

The correctness of this connection had already clearly pointed out the developmental psychologist Heinz Werner, who shared at the beginning of his research at the University of Hamburg an office with Ernst Cassirer. In referring to Cassirer, he writes in 1926 in his well-known and repeatedly published book *Introduction in Development Psychology*: “There are no optically-objective, but physiognomically-value-oriented measurements that dominate the spatial experience.”<sup>5</sup> To this he added, that all our senses are involved in this process. In conclusion he says, man is characterized by a ‘amodal sensing of vitality’ (‘amodale Vitalempfindung’, Ibid, 14–17):

This physiognomic or expressive consideration of things is conditioned by the essential participation of the affective dynamic overall behavior in the formation of objects.<sup>6</sup> (Ibid., 45–47, 46, translation into Engl. MS)

In the 1980s, the American developmental psychologist Daniel N. Stern followed Werner’s idea with his research on *The Interpersonal World of the Infant*. With respect to the perception of man, Stern speaks of a process of encoding that forms the realm of human expressiveness into a yet puzzling, amodal abstract representation that is recognizable in every sense. Already in the first days after birth,

5 Werner 1959 (1926), 121: „Nicht optisch-sachliche, sondern physiognomisch-werthafte Maßstäbe messen den Raum aus.“ (Translation into Engl. MS.)

6 Ibid., 45–47, cf. 46: „Diese physiognomische oder ausdrucksmäßige Betrachtung der Dinge ist bedingt durch die wesentliche Mitbeteiligung des affektiven dynamischen Gesamtverhaltens an der Gegenstandsgestaltung.“ (Translation into Engl. MS)

infants are able to generate these abstract representations and align their actions with them. These are not

images, sounds, haptic impressions and nameable objects, but rather forms, grads of intensities and time patterns – the more global characteristics of experience. (Stern 1992 (1986), 74–103, 80, translation into Engl. MS)

In addition, Stern notes, following Werner, that these recorded characteristics of perception are translated in characteristics of feeling. Stern calls them ‘vitality affects’. By designating them as such, he distinguishes them from discrete emotions such as fear or happiness. In contrast to the latter, the ‘vitality affects’ have to be described by dynamic, kinetic terms such as ‘bubbling up’, ‘fading’, ‘exploding’, ‘fading away’, ‘bursting’, ‘attracting’. (Ibid., 83) This ability to notice the differences in what is perceived on this most basic level as abstract representations and their evaluation as ‘vitality forms’ or rather as bodily sensitive ‘vitality affects’ also correspond to the results of Cassirer. Finally, Stern says that this ability is necessary for infants to ensure social interaction with their parents or other immediate caregivers, to interpret impressions from others and nature for to respond adequately to them. A proper understanding of non-verbal affective signs of caregivers is therefore urgently needed for to survive. In this respect, their concrete and adequate responses to impressions of the world and others depend on the correct evaluation of forms, grads of intensity and time patterns of sounds and haptic impressions of the caregivers. This dependence on the correct understanding of the ‘vitality forms’ of the caregivers decreases, when the child begins to communicate with the language between the 15th and 18th month. Nevertheless, even as an adult the reception and evaluation of abstract representations as kinetic forms or as ‘vitality affects’ preserve. (Ibid., 247–258) Like the concepts of Werner and Stern, Cassirer’s research is based on the same idea by assuming that the ability of ‘perception of expression’ (*‘Ausdrucks-Wahrnehmung’*) is constitutive for perception in general. Furthermore, he postulates that this kind of perception is necessary for all further processes of consciousness, be it mythical, pictorial, linguistic or conceptual processes of making sense. (Cassirer 1964 (1929), 94) In summary, this means that

life is at any time a 'life in the sense' ('Leben im Sinn'). (Ibid., 222–237, cf. 234–235)

This means that Cassirer, referring to this first original level, already indirectly assumes that man and nature belong together. Both are connected in reciprocal interaction. We respond to what we feel. What we feel is the state of nature. Her state is our state. This is, because we bodily feel every change of nature, and therefore we respond automatically to her. So, there is originally never any dichotomy between man and nature, because we are both dependent on each other. Obviously, this idea also shows Cassirer's closeness to his other fellow at the University of Hamburg, the biologist Jakob von Uexküll, who was the first to introduce Environmental Theory in 1909 with his book *Environment and Internal World of the Animals*. This theory follows the idea that in an ongoing process of self- or alien movement, each thing or being influences the development of the other. (Uexkuell 1909, cf. Cassirer 2007 (1944), 47–51, and with respect to Cassirer's connection to Uexkuell, cf. Krois 2011 (2004), 114–130)

### III. Process of Distancing or Alienating from Nature

However, this natural connection of all species, including man with nature becomes mutually disconnected by feeling consciously. Only man responds, it seems, not only to influences of impulses from nature, but consciously respond to them. Therefore, Cassirer concludes, man can interpret the consciously felt exterior world as something independent. In view of this findings, Cassirer's research focused on the question of how this is possible. Thus, he distinguishes between three phases of development, which always belong to us for anthropological reasons. On the first level, says Cassirer, where everything seems alive, whether it is a thing or not, man is connected with the world in a so-called 'You'-consciousness ('Du-Bewusstsein'). The description of this phenomenon is the subject of his second volume of *the Philosophy of Symbolic Forms* about *The Mythical Thinking* which Cassirer published in 1924/25. Only on a second level do people argue that there is a difference between 'things' and living

beings. The new understanding of man is changing, as Cassirer summarizes in his third volume on the *Philosophie of Symbolic Forms* with respect to the *Phenomenology of Knowledge*. In this context, Cassirer speaks of a so-called 'It'-consciousness ('Es'-Bewusstsein). Only on a third level does man notice himself as the one who recognizes others and nature, and thus can speak of himself as an "I". (Cassirer 1964 (1929), 73-107) Thus, Cassirer comes to the conclusion, man is in an ongoing process of dissociation or alienation ('Entäußerung') from the 'perception of expression', whose security and truth is, "so to speak, a pre-mythic, pre-logical and pre-aesthetic one; it forms the common ground from which all these creations are in some way derived and from which they remain arrested." (Ibid., 99-100. cf. 95, translation into Engl. MS). So, it is remarkable, that the world opens itself to man by forgetting the roots of perception. Parallel to Cassirer it was Heidegger who followed the same idea and also came to the conclusion that man forgot to be thrown into the world and thus forgot to be originally in an affective mood. This fact also prompts Heidegger to assume that man only learns to understand the world on this basis. Thus, he comes to the conclusion that human beings only learn to know the world in such a way, that man "ecstatically closes himself off from the origin (and thus from his 'being thrown' into the world, MS), and himself into one with it." (indem der Mensch "ekstatisch das Wovon (und damit seine Geworfenheit in die Welt, MS) verschließt und in eins damit sich selbst". (Heidegger 1984 (1927), 339, translation into Engl. MS, cf. further 334-350, cf. with respect to the differences between Cassirer und Heidegger, Sauer 2014, 118)

This process of forgetting and at the same time distancing and alienating, says Cassirer, is based on the 'image-driven and action-driven' ability of man ('Bildkraft und Tatkraft des Menschen'). This is, because the process of not only reacting but responding to the world and thus of producing sense that was originally triggered by the 'perception of expression' as Cassirer describes it, mirrors the fact that man has the ability "to present an image of the future before us (a representation) and to align our actions with it." (Cassirer 1964

(1929), 211–213, translation into Engl. MS, cf. Cassirer 2007 (1944), 83–91) ‘The first paves the way for the second. The symbol – this means that what becomes an image – rushes ahead of reality. The meaning of the preview (or the symbolic act) does not lie in the evidence of the being “but in the process of acting and forming”. This means, the process of acting and forming guides the understanding of the world. Through action, sense takes form. To make the difference between ‘vitality affects’, feeling them consciously and thus evaluating them as meaningful, ends in an image that guides our actions. The process itself is a form to give the future a direction. Both, presenting the future in form of an image before us as well as doing the same with events in the past shows and proves the original function of bringing into view and representation. Getting to know nature and world is not an act of grasping a finished and existing form, but lies in how the form takes shape, and thus in the understanding of the act itself as a process or way of giving and understanding form. (Ibid., 219–221, cf. 221, Cassirer 2007 (1944), 83–91, cf. 87)

Through this process of distancing, objectivating and at last alienating, our ‘image-driven and action-driven’ ability allows to respond to the impressions of nature. This means, that we are in an everlasting process less of knowing but of producing an image of nature and ways of responding to her. Thus, our image of nature is a product of a cultural process which realizes itself in language, in art, in theory, and science. Thereby, our image of the world finds not only an expression but rather is its conciseness (‘Prägnanz’), which is not nature. What is remarkable in this context is that it is necessary to make a rift with the original world of experience, because this ‘living world’ is not compatible with the new concept of things and the causal understanding that dominates our everyday life.

#### IV. Ways Back to Nature

Even if Cassirer and Heidegger as well as Werner and Stern say, that it is natural that we have to lose our connections to our feelings and thus to nature in order to represent the world ahead, everyone assumes that the connection to our original feelings, and thus to nature

is not lost. Cassirer gives as reasons for this that man has the ability to produce not only mental images, but real images of our impressions of nature and the world through art, and looking at art gives us back the lively experiences of our feelings. Thus, through art, we become aware of these original feelings. In this way it becomes clear, that with the help of art as media world and nature prove to be a product of our activity. In our everyday life we lose this knowledge, but with art we become aware of it. Art preserve this 'expressive being' of nature ('*Sein des Ausdrucks*') which we feel originally. In addition, art realizes this 'expressive being' of nature and world in an elevated, stronger form. Parallel to the potential of the 'perception of expression' to feel the liveliness of moving forms and spatial forms of nature, it is in relation to art, as Cassirer says, the experience of 'living forms' ('*lebendigen Formen*') that dominates the process of understanding. Cassirer gives us an example by describing a picture of a landscape which has been realized by an artist:

I (this is the recipient, MS) am beginning to produce an image of it (of the landscape, MS). So, I put my feet on a new terrain that is not the field of 'living things' but of 'living forms'. I no longer stand in the middle of the instantaneous reality of things, but move in the rhythm of spatial forms, with the harmony and contrasts of colors, with the balance of light and shadow. The entry into the dynamics of form is the basis of the aesthetic experience. (Cassirer 2007 (1944): 233–234, translation into Engl. MS)

The difference between the perception of artworks and nature, says Cassirer, is to feel the 'being of expression' ('*Sein des Ausdrucks*') in works of art that are free of random and accidental designations. This is, because the artist can grasp and capture the expression of the essence of nature. (Ibid., 212–234) The image is thus a creative expression or translation of the percept. Behind this background, Cassirer sees the artist as someone for whom the power of feelings is transformed into a concrete 'image-making and form-giving power'. (Ibid., 229) As a result, the feelings of the recipient also change when he perceives the image of nature, his original expressive feelings lose their action-driven power. Art transforms them into motion and not emotion, and this is a dynamic process of inner life that man can consciously feel. (Ibid., 212–234, cf. 229–230.) This power of the art to animate ('*verlebendigen*') is used for the subject. Unlike language



and science, which are abbreviations of reality, “art is an intensification of reality”. (Ibid., 221, translation into Engl. MS) The tools with which the artist evokes these feelings are colors and forms, light and shadow, which are brought into a chosen order.<sup>7</sup>

### Final Words: There is No Dichotomy Between Nature and Man

In conclusion, it should be pointed out that Cassirer cites the arts as proof of the assumption that man is dominated by processes of ‘perception of expression’ that enables him to experience what becomes reality in works of art. In this way, the detour via works of art gives people an original impression of how they originally feel and suffer the world and thus nature. This ultimately means that on this original level the feelings of the artist as well as of everyone are to be understood as indicators of nature. As Cassirer shows, this is due to the fact, that human perception is characterized by a ‘perception of expression’. In addition, Cassirer reveals her original function for our ability to think and act by pointing out her connection to our ‘image-driven and action-driven’ power. This capacity of man is based on feeling abstract representations as living, moving and spatial forms. By feeling and suffering we are able to experience their ‘lively being’. Related to the developmental psychological research of Werner and Stern, which is based on amodal and transmodal conditions, and assumes that all our senses are involved in the expressive perception of nature and art, it can be added that human beings not only see and feel but touch and feel, hear and feel, smell and feel as well as taste and feel. Thus, the feelings of all our senses convey the state of nature (as well as a view of it in the art) in different, but compatible and interchangeable ways.

7 Cf. to the latter the image concept of Bernhard Waldenfels, the so-called ‘Iconopathy’, which is based on „what is being met and affected with“ („Worauf eines Getroffen- oder Affiziertseins“), that is transformed into a ‘response’ („Worauf eines Antwortens“). Parallel to Cassirer, it is forms and colors, that excite the ‘pathos’, and that are answered by a ‘response’. (Ibid. 2008: 50–60., 57 and cf. Waldenfels 2010, 105–132)

Finally, an important aspect that should be considered more closely is the inclusion of artists as mediators between the information obtained about nature and its translation into works of art. In this context, abstract representations become important again, this time as tools or means of design to adequately convey the impressions or feelings of nature. To describe only one artistic field namely the fine arts, it must be noted that their tools for evoking feelings in the recipients are brush strokes that set colors and forms. But it is precisely this dependence of the arts on techniques that triggers irritation. Because they are techniques, it is obvious, that they can be used to evoke any kind of feeling. The effects realized by artists and felt by recipients therefore depend on the will of the producer or the client. It is this condition that allows some restrictions on Cassirer's original assumption. It is not absolutely necessary to believe that the artist uses these tools only in relation to what he receives from nature as information. Accepting this proves to be an idealistic concept. In contrast to a perception of the world that cannot be fooled, because it depends on nature and not on human action, the producer of works of art can realize an image as if it mirrors the state of nature. In other words, it can become a fake news.

But even if we exclude art as a mechanism of properly mirroring the state of nature, it seems to be a fact that when man encounters world and images of him, he depends on the 'perception of expression'. So, when we consider that nature itself can be randomly or intentionally transformed by man, we also respond to this changed nature in the same way. In addition, it becomes clear that, when the state of nature changes, we become aware of her as a *Critical Zone*. This is, because we feel and therefore know what has changed. This is possible because, as Cassirer emphasized, man has the capacity – with respect to his 'image-driven and action-driven ability' – to compare our current feelings, images and actions with earlier feelings, images and actions. In summary, this means that, in contrast to our experiences with art, our experiences with nature then and now can each be considered as real indicators of the state of nature. There is no dichotomy between nature and man.

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