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„Post-Apocalypse Now! Recursive Entanglements of Ecology and the Capitalocene in Pierre Huyghe's *After ALife Ahead*"

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Finally, I dedicate this work to my grandmother who has been an environmental activist for the longest time and continues to teach me new ways of thinking about our role in this entangled world.

My own experience is that the more we study Art, the less we care for Nature. What Art really reveals to us is Nature's lack of design, her curious crudities, her extraordinary monotony, her absolutely unfinished condition.
— Oscar Wilde, *The Decay of Lying*

1. Introduction

In October 2018, the Intergovernmental Panel on Climate Change (IPCC) published a special report on the impacts of global warming drawing a bleak picture of the planet's future:[1] If we do not put the brakes on immediately, we will not be able to limit global warming to 1.5°C degrees over the next 80 years, quite the contrary: if we remain on track, global temperature could even rise by up to 4°C degrees by the end of the century.[2] However, climate change is just *one* of the many ecological catastrophes predicted for the near future: we can also expect mass extinction and loss of biodiversity, glacial melting and sea level rise, deforestation, marine and air pollution, extreme weather phenomena, and soil erosion, to name but a few. What makes these environmental problems so treacherous is the long-term character of each: no five-year-Administration-period and no green-washing development plan can eradicate these issues immediately. This is evident in statements defending the long-lasting capitalist mechanisms that lead to our current condition in the first place like the following from Wells Griffith, advisor of US-president Donald Trump: "We strongly believe that no country should have to sacrifice economic prosperity or energy security in pursuit of environmental sustainability."[3] That is why we really need a shift in thinking; a re-evaluation of our relation to Nature itself—and, as I will show in this thesis, contemporary art plays a key role in this.

The widely discussed notion of the Anthropocene, which designates our current geological age as irrevocably altered at the hands of humanity,[4] is generally approached by scientists and activists who rely on empirical facts—thus inadequately taking the arts and humanities into account as adding possible

[1] IPCC 2018, p. 6.

[2] New, Liverman, Schroder et al. 2011, p. 6.

[3] Hugo 2018, n.p.

[4] Ellis 2018, p. 72.

perspectives on *why* human behavior posits a threat to Earth. As I will demonstrate in this thesis, contemporary artistic practices and media that consider post-apocalyptic scenarios are most helpful to updating age-old concepts in order to raise awareness for environmental issues and serve as a starting point to take action. Therefore, I believe that we can only prevent a planetary threat like climate change by acknowledging the multiple entanglements across disciplines, events, and agents by discussing it from just as many different angles. The creation of science fictional universes in art and media enables a mental journey to another future by raising the question: what will happen after the end of the world—and what is to be done here and now to prevent the dismal prophecies?

One of these worlds, which will be subject to this thesis, is *After ALife Ahead,* a temporary installation of a live bio-technical eco-system created by Pierre Huyghe, born in 1962 in Paris. The work was commissioned by *Skulptur Projekte Münster*, a decennial mega-exhibition focusing on art in public space, and exhibited from June 1st until October 1st, 2017. In order to outline Huyghe's work, a brief description is given below: *After ALife Ahead* takes place inside an abandoned ice rink built in 1981 and located in an industrial area outside of the city center. Before entering, visitors had to wait in line as the access was limited to a maximum of 30 people. Inside, an undulating, barren landscape sculpted from soil, sand, and clay awaits where the skating rink used to be. [Fig. 1] Sharply contoured pieces of concrete are scattered across the scenery, while phreatic water accumulates in the meter-deep ditches. A rectangular aquarium with glass panels periodically switching from transparent to black is located just beneath a roof hatch following the same rhythm. Inside, there is a hermit crab inhabiting the shell of a Conus textile as well as a genetically engineered, fluorescent fish, the *GloFish*. The daily rhythm of *After ALife Ahead* is based on the distinct pattern of the Conus textile shell that resembles Rule 30, a cellular automaton demonstrating how complex and chaotic properties emerge from a set of simple rules. Every now and then, a deep sound emanates from the aquarium and echoes across the whole space. The roof hatch opens and closes constantly, allowing for the penetration of external factors like rain, wind, and even pigeons. At the beginning of the exhibition, two chimera peacocks—hybrids of the common blue-green and albino peacocks—strutted around the space but were removed from the system just a couple of days after inauguration.[5] Inside the meter-

[5] Kock 2017, n.p.

high barrows, colonies of mining bees were settled whose swarming behavior is continuously recorded by infrared sensors. Further signs of life emerge in the water ditches over time: bacteria, insect larvae, and algae. An incubator containing HeLa cells, an immortal strain of human cancer cells, rests on an inaccessible spot on the former grandstands. An algorithm collecting monitoring data from the system regulates the conditions inside the incubator and determines the cells' proliferation. Although visitors could not verify the presence of HeLa cells, the mere idea of contaminated bio-mass growing rampant tends to cause discomfort. The results become visible in an accompanying augmented reality application: more inverted black pyramids emerge on the ceiling when the cells multiply, thus connecting the virtual world to the real-world. [Fig. 2]

Pierre Huyghe designed *After ALife Ahead* as an interdependent eco-system of agents, processes, and rules operating autonomously until the end of *Skulptur Projekte*. Visiting the work resembled traveling into an alternative reality that appeared post-apocalyptic, ruinous, and unlivable—especially considering the exclusion of humans that would only become part of the eco-system as visitors. By performing on the borderline of culturally produced contradistinctions[6] like natural and artificial or living and non-living, the work offers the possibility to re-evaluate the significance of these notions. This is the reason why the work is determinative to this thesis: *After ALife Ahead* strives to counterbalance between the alleged contradictions of art and science, ecology and technology, fact and fiction, and does so by focusing on their entanglement instead of their discrepancies. The central role assigned to recursive structures by Huyghe enables *After ALife Ahead* to become a starting point for the examination of the intertwinement of a variety of fields of knowledge—and, given art's capability to provide thought-provoking impulses, to transform eco-relational thinking into a practicing mode of critique on behalf of the visitors. Far from returning to the art historical tradition of the monograph, this thesis seeks to point out the necessity of interdisciplinary entanglement in order to combat the ecological catastrophe.

[6] Although the Western tradition of thinking in binary oppositions precedes René Descartes by centuries—for example, in Christian theology or even Plato's theory of forms—the pillars of mind-body-dualism are often attributed the French philosopher. In this thesis, I will refer to this particular philosophy as Cartesian dualism. See also Moore 2017, p. 10.

1.1. Thesis Statement and Research Questions

After ALife Ahead is a post-apocalyptic scenario propagating a post-anthropocentric worldview necessary to contemplate contemporary issues of political ecology. The work challenges the binary oppositions of natural and artificial, human and non-human, real and fictional, and living and non-living. This becomes evident in the choice of the eco-system as a medium: philosopher Timothy Morton uses the model of the Möbius strip to argue that ecology can only become a primary concern if we deconstruct the modernist definition of nature as opposed to culture, as they are two sides of the same coin.[7] The highlighting of the artificiality of nature in *After ALife Ahead*, for example, in the use of chimera peacocks or genetically altered fish, makes it virtually impossible to draw a line of demarcation between nature and culture. Therefore, in a broader sense, thinking ecologically requires a softening of culturally constructed binary oppositions for the sake of de-hierarchization and an actualization of social and ethical values.

In order to accomplish this reevaluation, I propose a relational analysis of *After ALife Ahead* building on environmental science, philosophy, and science fiction. The environmental sciences—including geology, which delivers *hard facts* concerning climate change, and ecology, which prioritizes the relations within and without a system—go hand in hand with philosophical reflections on art, nature, and humanity's entanglement therein. In addition, science fiction narratives examine the constitution of worlds; however far-fetched they may seem, they draw on issues from the real-world and fictionalize them in order to speculate what the future might look like.[8] The post-apocalyptic scenario of *After ALife Ahead* is paradigmatic for the triumph of such narratives in contemporary media and, in turn, symptomatic of the short and violent history of the 21st century.[9] The post-apocalyptic setting allows for inferences to our contemporary world, raising questions like: How does the fictional reality constituted in *After ALife Ahead* relate to problems of the Anthropocene? What kind of scenario is imagined in *After ALife Ahead* and how does it relate to

[7] Morton 2016, p. 108.

[8] Barikin, Hughes 2013, p. 10-11.

[9] Some examples of contemporary post-apocalyptic media include the novel *The Road* (2006) by Cormac McCarthy, movies *Dawn of the Dead* (2004), *I Am Legend* (2006) and *2012* (2009), TV shows like *The Walking Dead* (since 2010) and (mostly) *Black Mirror* (since 2011) and video games like the *Resident Evil* series (since 1996), the *Fallout* series (since 1997), *Portal* and *Portal 2* (2007/2011) and *The Last of Us* (2013).

other contemporary media of the last twenty years? What kind of power relations can be traced between the agents of the eco-system? What is the significance of the modernist ruin in *After ALife Ahead*? What is the role of art in light of the environmental crisis? Where can the work be situated in the dichotomy of art and science? Why are humans excluded from the eco-system and what kinds of experience are possible once they take part in *After ALife Ahead*? How does the work relate to our current condition of late capitalism? And what does the parallel world depicted in *After ALife Ahead* predicate about being human in the age of post-humanism?

1.2. Problems

The notion of the Anthropocene has been coined by Paul Crutzen and Eugene Stoermer in 2000 and describes the major influence humanity has had on Earth that might as well mark the beginning of a new geological epoch.[10] The term is closely linked to the belief of anthropocentrism or human supremacism, which states that humans constitute the summit of creation. Although the exact beginning of the Anthropocene is disputed,[11] stratigraphical evidence acknowledges that humans have left an undeniable imprint on Earth.[12] Since 2000, there have been many updates on the Anthropocene for a variety of reasons—most prominently, the notion of the Capitalocene as used by James W. Moore and Donna Haraway.[13] The Capitalocene marks the spread of capitalism in the 15th century as "a turning point in the history of humanity's relation with the rest of nature".[14] In addition, it shifts the

[10] Crutzen, Stoermer 2000, p. 17.

[11] For example, Crutzen determines the invention of the steam engine during the Industrial Revolution in the 18th century as a starting point of the Anthropocene (Crutzen, Stoermer 2000, p. 17-18), the IGBP proposes global expansion after World War II to be the onset of said period (Steffen, Sanderson, Tyson et al. 2004, p. 14-18), and Bruce D. Smith and Melinda A. Zeder place its beginning at the Pleistocene-Holocene boundary approximately 11,000 years ago (Smith, Zeder 2013), p. 8-9.

[12] However, humanity's responsibility for climate change is unequally distributed: "In the early 21st century, the poorest 45% of the human population accounted for 7% of emissions, while the richest 7% produced 50% […]". Malm, Hornborg 2014, p. 3.

[13] Moore 2016a, p. 5.

[14] Moore 2017, p. 596.

focus away from humanity as a whole (as in *anthropos*) and to the specific, entangled historical condition that is capitalism.[15]

Here, it strikes me as crucial how art can be a powerful tool to perform a critique of capitalism. Further, the history of capitalism is deeply intertwined with the history of art, for example, in the establishment of the art market in the early modern age or concerning nonconformist attitudes such as institutional critique. Therefore, I argue that we should turn to contemporary art that addresses the Capitalocenic entanglements in order to reflect on the environmental crisis.

Growing up in an era of climate change, loss of biodiversity, and strategic environmental pollution, I cannot remember a time when the planet was not postulated to be in a state of crisis from a human perspective. However, most undertakings to save the environment only served as a proverbial drop in the ocean and, moreover, played a part in contributing to the gap between nature and culture becoming wider. Overcoming the ongoing environmental crisis is, as Félix Guattari suggests, only possible when acknowledging the relations between the individual, the social, and the environmental ecologies as coherent.[16] The separation of the natural and the artificial is also symptomatic of the binary oppositions constitutive of Western hegemonic thinking; therefore, we need to deconstruct this dichotomy to pave the way for a political change in thinking, which will not only focus on political ecology, but also on the realms of intersectional feminism, de-colonialism, human-animal studies, and post-humanism.

I argue that After *ALife Ahead* is criticizing the binary of naturalness and artificiality by creating an eco-system that relates multiple agents of *natureculture*, a term used by Donna Haraway to highlight the intertwining of these alleged contradictions.[17] It is vital that the work was designed to operate autonomously inside what Pierre Huyghe calls a "porous environment."[18] This implies that the eco-system was not hermetically sealed, meaning that instead of opposing the inside to

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[15] Later on, Haraway elaborates on the Capitalocene and proposes the *Chthulucene*: "This Chthulucene is neither sacred nor secular; this earthly worlding is thorougly terran, muddled, and mortal—and at stake now. […] Specifically, unlike the Anthropocene or the Capitalocene, the Chthulucene is made up of ongoing multispecies stories and practices of becoming-with in times that remain at stake, in precarious times, in which the world is not finished and the sky has not fallen—yet. We are at stake to each other." Haraway 2016c, p. 55.

[16] Guattari 2000, p. 41.

[17] Haraway 2016a, p. 95.

[18] Huyghe, Obrist 2018, 5min.

the outside, both concepts are intertwined or "porous". Thus, my interpretation conceives the work as a work of speculative fiction where the deconstruction of the natural and the artificial has already taken place. This allows not only for thought experiments on forms of bio-technological evolution, the significance of human concepts for cyborgs, and—as the title suggests—an afterlife for artificial creations;[19] but also a critical approach toward the mythologized distinction between art and nature. Furthermore, the experience of visiting *After ALife Ahead* resembles an immersion into a very specific kind of science-fictional world: post-apocalyptic media, that is, narratives that take place in the aftermath of the inevitable catastrophic end of the world, have enjoyed great popularity over the last twenty years. Considering that the 21st century has faced a series of catastrophes like 9/11, natural disasters like tsunamis and hurricanes, a global financial crisis as well as a rise in terrorist attacks and warfare, watching fictional characters fighting through the apocalypse takes on a consoling function as it creates the possibility to reflect on what to do in case of crisis.[20] In addition, simulating such a scenario makes it possible to contemplate on how to avoid this kind of future and take action in the here and now. Finally, it strikes me as crucial that *After ALife Ahead* is a contribution to the spectacular mega-exhibition *Skulptur Projekte Münster* since its target audience serves, for the most part, as exemplary for the main cause of the ecological crisis as criticized by the concept of the Capitalocene: the Western capitalist society.[21] This imposes an even greater responsibility on the international art world in regard to ecological sustainability and should act as a call for using our privileges as a means of action.

1.3. Importance of research

Writing on *After ALife Ahead* is crucial for the field of art history as the installation only lasted over the four-months of *Skulptur Projekte* and will not be reassembled again. Moreover, Pierre Huyghe is becoming increasingly important for the

[19] The term *artificial life* is often abbreviated as *a-life* in biological literature. This interpretation is further prompted by the German translation of the work's title, *Nach einem K-Leben vor dem, was kommt*, considering that *K-Leben* serves as an abbreviation of *künstliches Leben*, i. e. artificial life.

[20] Žižek, Gunjević 2012, p. 80.

[21] To be precise, other economic systems "… devoured resources with as much enthusiasm as their capitalist counterparts, and spewd waste just as recklessly. Before the fall of the Berlin Wall, for instance, Czechs and Russians had even higher carbon footprints per capita than Canadians and Australians." Klein 2014, p. 402.

contemporary art world: he scored number two on ArtReview Power 100 in 2017,[22] had a solo exhibition at the Serpentine gallery curated by Hans Ulrich Obrist in 2018,[23] and was named artistic director of the Okayama Art Summit 2019.[24] Additionally, many critics interpreted *After ALife Ahead* as a continuation of his critically acclaimed contribution to *documenta 13*, *Untilled*.[25] There, Huyghe arranged a heterogenous eco-system of psychoactive plants, a dog called *Human*, and a modernist sculpture. Interestingly, very few contributions discussing Pierre Huyghe's work in an ecological context have been made. With the artist refocusing on eco-systems, aquariums, and working with living organisms in his practice since the late 2000s, a whole part of his body of work has been neglected or only inadequately examined. While there has been an ongoing interest in ecological issues in the arts at least since the environmental movements of the 1960s and 70s, I will focus on the significance of an established artist like Huyghe turning toward this topic in the context of an equally celebrated mega-exhibition. Considering the unequal distribution of humanity's responsibility for climate change,[26] a critical discussion of this artistic practice involves an analysis of the role of capital in the Capitalocene as well as the *art world's* stance toward sustainability.

In addition, my examination of the cross-linkage between environmental science and the arts through the lens of relationality contributes a wide-ranging framework useful for evaluating a greater branch of contemporary art practices concerned with ecology. Further, *Skulptur Projekte 2017*, one of the most anticipated art exhibitions worldwide, could be described as an eco-system of contemporary art itself. However, instead of simply writing a monograph on Pierre Huyghe, I want to use the topics processed by *After ALife Ahead* as well as the work's recursive structure to demonstrate its interconnectedness to a variety of disciplines that eventually moves beyond the field of art history.

In the broadest sense, *After ALife Ahead* approaches topics such as geo-engineering and genetic modification that might seem futuristic but are really part of

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[22] Buck 2017, n.p.

[23] Farago 2018, n.p.

[24] Ishikawa Foundation 2017, n.p.

[25] von Hantelmann 2018, p.15.

[26] Malm, Hornborg 2014, p. 3.

our contemporary society. However, the public debate is often overly one-sided, for example, in the case of the cloning of the sheep Dolly.[27] Addressing such topics in a work of contemporary art enables the opening of a space of discourse is that is, on the one hand, abstract enough to talk about such problems without fearing the uncanny weight of real-world problems, and, on the other hand, precise enough to work through these problems without severing ties with the real-world. In a technocratic society equipped with possibilities such as genetic control or doomsday at the click of a mouse,[28] it is only a matter of time before the notion of humanity needs to be revised as can be seen in emerging fields of study like human-animal studies or trans- and post-humanism. To analyze and define what it means to be human presupposes to define concepts like nature, artificiality, hybridity, living, and non-living. However, as I will show in this thesis, many of these notions have been coined in the 18th and 19th century and have only been insufficiently updated. To revise these most basic concepts for the era of bio-engineering and artificial intelligence requires to deconstruct these notions as sociocultural constructs and update them in terms of intersectionality, democracy, and inclusion, which constitutes the political realm of the work. Additionally, by researching the post-apocalyptic setting and the significance of ruins, I can contribute to a growing field of art and media practices that are thematizing the end of the world. In turn, this allows us to draw some implications of the contemporary status quo of the Capitalocene—not only of our planet, but of society, too.

1.4. Literature review

In general, this thesis pursues an interdisciplinary approach. This is reflected in the relevant literature, which stems from the fields of philosophy, art history, biology, ecology, and science fiction. Moreover, I will not limit my research to academic literature but instead work with contemporary media—especially movies and video

[27] If biotechnological topics are in the news, they are usually represented in a deterrent way. The same can be said about ecological problems: even though there are lots of documentaries and the like on climate change or pollution, there has been no sustainable basis of discussion to find a solution up until recently, for example, with the establishment of student-lead demonstrations such as *Fridays for Future* as founded by Greta Thunberg.

[28] Here, I am referring to the Cold War-era idea of a *doomsday device* that has the power to destroy the whole earth via one click and is often used as a trope in science fiction, e.g. in the movie *Dr. Strangelove* (1964) by Stanley Kubrick. See also Galison 2014.

games stemming from popular culture—as well as exhibition reviews, interviews, and press articles as sources.

As of June 2019, the sources on *After ALife Ahead* merely consist of a couple of articles, reviews in art magazines, short descriptions in catalogues and guidebooks concerning *Skulptur Projekte Münster 2017* as well as newspaper interviews with the artist. One of the most extensive examples is *Rock Paper Scissors* by Benjamin H. D. Buchloh that addresses the biological framework of turn-of-the-century vitality biologists like Jakob von Uexküll.[29] Dorothea von Hantelmann's article *Situated Cosmo-Technologies* examines the similarities of Huyghe's redefinition of art in his works *Untilled* (2012) and *After ALife Ahead*.[30] In addition, I collected research material provided by the artist's studio and the galleries that represent Pierre Huyghe. Monographs like *Parallel Presents: The Art of Pierre Huyghe* by Amelia Barikin and *Pierre Huyghe*, the exhibition catalogue from his retrospective at the *Centre Georges Pompidou*, all tend to focus on Huyghe's work from the 1990s and early 2000s *before* he began to concentrate on working primarily with living creatures.[31] Still, they remain valuable sources in examining Huyghe's approach toward the entanglement of fact and fiction. *Versuch einer Kosmologie des Performativen in der Kunst. Über Alfred North Whitehead und Pierre Huyghe* by Maximilian Haas is a comparison of Huyghe's artistic practice and Whitehead's philosophy of process, which is central to the discussion of time in my thesis. Lastly, a magazine edited by the artist himself called *Pierre's* from 2016 is a valuable source for staking out the framework from the fields of process philosophy, contemporary art history, object-oriented ontology, deep ecology, post-humanism, and science fiction.

In the field of art history, Rosalind Krauss' theory of the post-medium condition developed in her essay *A Voyage on the North Sea* is crucial to describe the medium of *After ALife Ahead:* the co-dependent eco-system. In her attempt to criticize the concept of media specificity as stipulated by Clement Greenberg, which foregrounds a formalist understanding, Krauss proposes to think of the medium as a

[29] Buchloh 2017, p. 278.

[30] von Hantelmann 2018, p. 17.

[31] In general, I distinguish between Huyghe's work before and after 2012. The turning point is the year in which *Untilled* was exhibited at *documenta 13*, the first full eco-system created by the artist. Although Huyghe tackled ecological issues in his earlier works too, *Untilled* marks the usage of live eco-systems and animals as artistic practice and therefore the body of work I want to focus on.

recursive structure.[32] In *Guarantee of the Medium*, Krauss returns to a broader concept of media specificity that she refers to as "technical support",[33] which I will use to refer to Huyghe's interest in recursive structures. In *After ALife Ahead*, the set of relations or rules are subject to change whenever the parameters change—for example, a rainy day produces less inhabitable conditions inside the incubator than a sunny day. Further, the concept of a recursive structure is primarily used in systems theory and is central to Humberto Maturana and Francisco Varela's definition of life, Nicolas Bourriaud's theory of relational art, or ecological concepts such as niche construction, as will be shown later.

In his collection of essays titled *Relational Aesthetics*, Nicolas Bourriaud tries to elucidate new criteria for the judgment of art of mainly emerging continental European artists of the 1990s[34] and defines relational art as "a state of encounter."[35] According to Bourriaud, because of an understanding of the audience as a community and, as a consequence thereof, an orientation toward relations between people, the beholder evolves into the participant and the immediate experience is privileged. In his later work, *The Radicant*, Bourriaud seeks to pin down certain characteristics that determine our contemporary era and compares them to the growth of radicant plants.[36] The form of radicant aesthetics is expressed in the journey or the finding of new paths rather than confiding in "a fixed space or time",[37] thus opening up the possibility of different temporalities and constitutions of space in a work of art. This relates to the multitude of traces of space and time in *After ALife Ahead*, for example, the evocation of the middle Paleolithic age, Greek ancient times, the Romanticist era as well as the bio-technological turn in the 1990s. However, it is necessary to decolonize Bourriaud's privileged approach toward

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[32] Krauss 2002, p. 6-7. Further, Krauss mentions Joseph Kosuth's work *Art as Idea as Idea* (1969) to show that without media specificity, questioning the essence of art does not consist of questioning the medium but ideas and conceptions of art itself.

[33] Krauss 2009, p. 142.

[34] Artists often referenced by Bourriaud include Pierre Huyghe, Philippe Parreno, Sophie Calle, Rirkrit Tiravanija, Dominique Gonzalez-Foerster, Félix González-Torres, among others.

[35] Bourriaud 2002, p. 18.

[36] Bourriaud 2009, p. 22.

[37] Bourriaud 2009, p. 114.

mobility, which is all too often lacking a critical understanding of the effects of globalization and migration.

In *Decolonizing Nature: Contemporary Art and the Politics of Ecology*, T.J. Demos argues that colonialism not only led to exploitation and oppression of people, but also of nature, as it serves as a valuable resource for capitalism.[38] Further, I will use James Meyer's notion of the "functional site,"[39] which marks the transformation of site-specificity from a physical location to an allegorical one. I will also revert to the analysis of allegorical sites in the work of Robert Smithson by Craig Owens in his essay *The Allegorical Impulse: Toward a Theory of Postmodernism*. Jack Burnham's seminal essay *System Esthetics* from 1968 marks the beginning of an awareness for the examination of systems-related art. In her essay *It Was What It Was: Modern Ruins,* Gilda Williams considers the ruin in contemporary art as a signifier of the breakdown of modernism and the beginning of our contemporary period, exemplified by the collapse of the Twin Towers in 2001.[40] The ongoing fascination for post-apocalyptic narratives in literature, film, and television is investigated by Eva Horn in *The Future as Catastrophe*. This selection is important for my thesis because Horn attempts to define the omnipresence of post-apocalyptic narratives from a cultural perspective, for example, in the discussion of military strategist Herman Kahn's "scenarios".[41] Although this thesis wants to emphasize the interconnectedness of nature and culture, I am still engaged with literature that is concerned with labeling art using living organisms as "bio art" or "transgenic art." Although these umbrella terms may still point out an inherent difference in the great dichotomy of life and death, many works discussed under these notions often transgress the boundaries thereof and attempt to rewrite outdated concepts of biology, technology, and culture. Most notably, I refer to Suzanne Anker and Dorothy Nelkin's *The Molecular Gaze: Art in the Genetic Age* for their elaboration on hybrids in art history.[42]

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[38] Demos 2016, p. 202.

[39] Meyer 2000, p. 25.

[40] Williams 2011, p. 94.

[41] Horn 2018, p. 94-95.

[42] Anker, Nelkins 2004, p. 83.

In order to understand the notions of evolution and life and formulate my own theories on the living agents of *After ALife Ahead*, I want to examine some primary sources, including Charles Darwin's *On the Origin of Species,* 1859*,* for introducing the idea of evolution, and Ernst Haeckel's introduction of the notion of ecology as a relational organism of organic *and* inorganic agents in *Generelle Morphologie der Organismen* from 1866.[43] A more recent approach to life can be found in Humberto Maturana and Francisco Varela's notion of autopoiesis, which unifies the producer and product in the same entity.[44] Further, I will discuss several works of biologist and philosopher Donna Haraway: her seminal essay *A Cyborg Manifesto: Science, Technology, and Socialist-Feminism in the Late Twentieth Century* is a treatise on the cyborg as intermediary chimera between humans, nature, and machine, famously stating: "The cyborg is our ontology, it gives us our politics."[45]*Modest_Witness@Second_Millenium FemaleMan©_Meets_OncoMouse*™ examines influential figures of techno-science and attempts to connect these hybrids to *human* definitions of life. *The Companion Species Manifesto: Dogs, People and Significant Otherness* challenges the notion of species by sketching a history of evolution through our companions. In order to highlight the entanglement of the notion of species, Haraway recoins the term in *Staying with the Trouble: Making Kin in the Chthulecene* as "… assemblages of organic species and of abiotic actors make history, the evolutionary kind and the other kinds too."[46] All four publications prove to be of vital importance to extend dated biological notions into the realms of social issues. In *The Posthuman*, Rosi Braidotti gives an overview of the recent field of study and explores the possibilities of post-humanism, especially in terms of social, economic, and ecological sustainability.[47]

My review of the ecological literature begins with Félix Guattari's *The Three Ecologies*, an early example of advocacy of an all-inclusive ecology, and *Chaosmosis*, a treatise on subjectivity and how it can be produced in close communication with the environment. Both publications offer an approach towards

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[43] Haeckel 1866, p. 286.

[44] Maturana, Varela 1987, p.49.

[45] Haraway 2016b, p. 7.

[46] Haraway 2016c, p. 100.

[47] Braidotti 2013, p. 167.

eco-sophy that is vital to this thesis.[48] Timothy Morton's writings *Ecology Without Nature: Rethinking Environmental Aesthetics*, *Hyperobjects: Philosophy and Ecology after the End of the World,* and *Dark Ecology: For a Future Logic of Coexistence* are central for my research and help to enunciate how one of the biggest problems in contemporary ecology lies in the distinction between nature and culture.[49] Important literature concerned with the Anthropocene includes William M. Denevan's essay *The Pristine Myth,* which argues against the idealization of untouched nature,[50] Andreas Malm and Alf Hornborg's article *The Geology of Mankind?,* which questions the universal distribution of guilt across humanity as suggested by the notion of the Anthropocene as well as Jason W. Moore's *The Rise of Cheap Nature* for establishing the term Capitalocene.

Important philosophical concepts for the assessment of *After ALife Ahead* are Michel Foucault's notions of bio-politics and bio-power as a means to govern modern societies, thus bringing "life and its mechanisms into the realm of explicit calculations and [made] knowledge-power an agent of transformation of human life."[51] Giorgio Agamben's further expansion of these concepts in *Homo Sacer* are relevant due to the distinction between *bios* and *zoē*, focusing on the politicization of life.[52] This distinction is relevant for discussing the ethical handling of non-human living beings such as HeLa cells or the GloFish. In *Geontologies: A Requiem to Late Liberalism*, Elizabeth Povinelli extends this idea to non-living beings using the concept of *geontopower* and exemplifying it with ethical borderline cases such as the attempted murder of an indigenous site in Australia.[53]

Science fiction writers are largely concerned with the creation of authentic worlds. Looking into several pivotal novels, films and games proves to be significant

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[48] Ecosophy is a coinage of ecology and philosophy and focuses on thinking ecology as not limited to environmental protection but as a state of responsibility towards the individual, society, and nature.

[49] Although Morton is often cited as an advocate of Object-Oriented Ontology (OOO), I decided to work with his writings but not the general metaphysical field of OOO because of the problematic ontological acceptance of objects. Taking anything as given *a priori* seems unreasonable when thinking processually and recursively. Therefore, process philosophy in the tradition of Deleuze and Guattari seems more appropriate in terms of a democratization of living and non-living agents.

[50] Denevan 1992, p. 369.

[51] Foucault 1978, p. 143.

[52] Agamben 1998, p. 1.

[53] Povinelli 2016, p. 32.

for my thesis. The difference between these consumable media and *After ALife Ahead* is the opportunity of experiencing and participating in such a *site-fiction*,[54] to use a term by Huyghe himself. The first science fiction story ever is *Frankenstein, or the Modern Prometheus* by Mary Shelley from 1816. A detailed examination of the recurrence, as well as alterations to the Frankenstein myth and issues of artificial life, can be found in Jon Turney's *In Frankenstein's Footsteps*. In the book, the author also succeeds in merging science fiction and biological facts as a prerequisite for a broad discussion on the cultural significance of Shelley's story[55]—a desired outlook for my own thesis. Furthermore, I want to examine science fiction narratives focusing on non-Darwinist approaches of evolution. Here, the most notable work is the video game *Horizon: Zero Dawn* by Guerilla Games, which is set in a post-apocalyptic Earth in the 31st century and shows a unique blending of biological and technological components through evolution similar to the heterogenous agents of *After ALife Ahead*.[56] The movies *Snowpiercer* (2013), which deals with the last humans on Earth trapped inside a closed-off eco-system, and *Okja* (2017), an adventure movie about a genetically engineered animal and her loving owner, by Bong Joon-ho both pick post-anthropocentrism as a central theme. Questions on morality and the distinction between nature and culture on the basis of ruin symbolism are subject to the video game *The Last of Us* (2013). Lastly, the movie *Annihilation* (2018) by Alex Garland questions what would happen if the Earth got cancer and directly cites HeLa cells throughout many scenes. The movie could be termed as post-anthropocentric as the alien cancer growth is not presented as destroying the planet but merely changing it.

1.5. Methodology

The main focus of this thesis is to examine, discuss, and update notions of nature that have been conceptualized in the tradition of Cartesian dualism. This requires to do the same to its counterpart, namely culture or art, which is why I discuss these

[54] Rafael 2017, p. 210.

[55] Turney 1998, p. 214-215.

[56] Other notable examples of science fiction narrations approaching issues of evolution in conjunction with (bio-)technology include Stanley Kubrick's *2001: A Space Odyssey* (1968, based on Arthur C. Clarke's short story *The Sentinel*), the movie franchise *Planet of the Apes* of the early 1970s as created by Pierre Boulle, the movie *Gattaca* (1997) by Andrew Niccol, *Splice* (2009) by Vincenzo Natali as well as the game series *BioShock* (since 2007).

ideas using the example of Pierre Huyghe's work. My attempt at deconstructing these binary oppositions focuses on their interconnections instead of their alleged differences. Then, I turn to analyzing questions concerning the constitution of humanity in times of environmental crises, bio-technological modifications, and the approximation of human and non-human respectively living and non-living agents. In order to do so, I return again and again to the concepts of *relationality* and *recursion* that form the backbone of many theories discussed in this thesis. In my understanding, thinking relationally provides a sense of purpose by privileging the connections between agents who are themselves an accumulation of overlapping relations and not singular or detached from their environment. As far as relationality is concerned, it is unreasonable to filter objects out of their surrounding context, since they can only be understood *in relation to it*. Recursion, on the other hand, I understand as the constant exchange between agents and their environment. Over time, this is apparent from reciprocal interferences and alterations. Both concepts stand in the tradition of holism which privileges the whole over the sum of its parts.

My thesis does not simply deliver a formal description of *After ALife Ahead* before contextualizing it in Pierre Huyghe's œuvre, or a traditional art historical approach to the monograph. Instead, I use his work as a point of reference to establish relations not just to works of art that make use of similar technical supports and topics,[57] but also to other forms of media, namely film and video games, that address the same issues. Ultimately, the deconstruction of the notion of nature goes hand in hand with the deconstruction of culture to which art belongs. So, what happens to the concept of art once it is deprived of its linearity and singularity? I argue that it becomes a processual kind of cultural practice that is only differentiated from other forms of media through its contextualization. In *After ALife Ahead*, this is already demonstrated in the hybridity of media that also connects the real-world to the virtual world through the augmented reality application. Hence, we are faced with a multimedia-scape stretching across different materialities and disciplines. Since the work is mediated through the spectacle of the mega-exhibition, a pessimistic view might lead us to believe that it is just as consumable as a movie or TV show. This implies an ongoing entrapment in the capitalist system on a broader scale that ultimately discourages us to break free from it and take

[57] For example, comparable approaches to eco-systemic art can be found in the works of Ian Cheng, Bonita Ely, and Hans Haacke. Other artists focusing on post-nature include Anicka Yi, Agnes Meyer-Brandis, Forensic Architecture, Christian Kosmas Mayer, among many others.

matters into our own hands. However, I do believe that appreciating the work's entanglement between art, media, and science is actually what makes it more real than imaginary—and, considering the ecological crisis where "the reality is quite real",[58] practicing intertwinement instead of a separation of cultural practices and an elevation of art just for art's sake might be the only way to take action. This is why this thesis does not only pursue an interdisciplinary approach in terms of textual analyses of the aforementioned literature stemming from a variety of fields, but also an inclusion of different forms of media that are supposed to highlight how we can approach the pressing issue of environmental damage from a variety of perspectives. Tantamount to the complexity and hybridity of the Capitalocene, *After ALife Ahead* is not only making use of naturalcultural beings as parts of the work, but also reflects this approach in a multiplicity of media. Beyond Huyghe's work, this can be understood as the need to take action on the individual and collective level as well as on the real, symbolic, and imaginary layers in order to practice an integral critique.

Since *After ALife Ahead* takes on the form of an eco-system, this will also be reflected in a corresponding structure of this thesis which could be deemed *rhizomatic*.[59] [Fig. 3] As mentioned above, I presume that the substantial parts of the work cannot be found in the single elements, but in their relations with one another. Therefore, I do not want to separate single parts from the rest of the work, but instead chose an array of relations describing which connections can be traced in *After ALife Ahead*. As Hans Haacke, a pioneer of systems art, put it: "To separate the elements would be to destroy the system."[60] Therefore, I will pick out superordinate characteristics for the chapters, for example, site-specificity or hybridity, that are not limited to one or two elements of the eco-system but are present throughout the whole work. This way, my thesis reflects on the relational and recursive character without a beginning or an end constituted by *After ALife Ahead* and opens up the possibility of transversal reading in no particular order.[61] This is relevant because it enables us to discuss a work of art without linear narrativization;

[58] Moore 2016, p. 1.

[59] A detailed analysis of the Deleuze and Guattari's concept of the *rhizome* can be found in chapter 2.1.

[60] Haacke 2012, p. 28.

[61] However, this is narrowed down to the nine subchapters of chapter 2: *After ALife Ahead*.

instead, it constitutes a methodology that is inclusive of art's inevitable re-contextualization over time. Without a fixed hierarchy of reading, meaning constitutes through cross-references and the emergence of new relations within the same text. Of course, this is not just the case for Huyghe's work, but for contemporary artistic practices in general, which are more prone to changes in meaning because of their pre-historicized and pre-canonized status. Therefore, writing on contemporary art cannot proceed in the same fashion as writing on historical art, which gives us the opportunity to translate this matter of fact into our writing and methodology.

In addition to the discussion of literature and the attempt of establishing a new methodology, my research consists of a close study of the preparatory drawing that fills in the gaps in knowledge from my extensive visit of the site in September 2017. [Fig. 4] However, as a work of relational art, I want to emphasize that it is not my sole experience of the work, but the enclosing field of theories, questions, and inter-exchanges that form the basis of an adequate methodology. Nevertheless, upon visiting, I was able to obtain information that is otherwise hard to find, such as the *house rules* as uttered by the on-site attendants. Further, many discussions on *After ALife Ahead* with fellow art historians as well as scientists from other disciplines have been incorporated into this thesis as well. Sadly, I was not able to visit the archive of *Skulptur Projekte* because it is currently being installed and will only be open to the public over the course of 2019.

1.6. Limitations and key assumptions

In terms of Pierre Huyghe's work, my thesis will be limited to the analysis of *After ALife Ahead* as well as side notes of some of his other works including *Untilled*, *A Journey That Wasn't*, *Timekeeper*, *Cambrian Explosion 10*, *Light Conical Intersect*, and *Human Mask*. Earlier works without any kind of clear connection to my thesis will be neglected.

Needless to say, there have been countless artworks approaching issues of ecology, beginning with land art in the 1960s. However, in order to theorize Huyghe's artistic practice in the broader net of contemporary art and establish it as an approach addressing the environmental crisis, I also refer to works by Anicka Yi, Joseph Beuys, Revital Cohen and Tuur van Balen, among others. I am also not interested in drawing a genealogy of sculpture: Pierre Huyghe's work has often been

described as an extended notion of sculpture.[62] Nevertheless, I do not gain any insight for my thesis by referring to his work in this way, especially as it implies an avoidance of media specificity. Therefore, I will work with Rosalind Krauss' suggestion of the *technical support*. The same is true for the notions of environmental art, bio art, and transgenic art. Lastly, the article *Inhumanist Art and the Decolonization of Nature* by Steve Klee seeks to highlight the transcendental sides of *After ALife Ahead* for the sake of emphasizing humanity's capacity for rational thinking. This requires an elevation of humans above other forms of life and non-life resulting in the same age-old hierarchization. In my opinion, this intrinsically misses the point of political deconstruction and is in no way desirable for my thesis.[63]

1.7. Chapter overview

Chapter 2.1. introduces the cosmology of *After ALife Ahead* on the basis of its preparatory drawing. Beginning with a detailed description, I argue that the work and the drawing interrelate in a recursive manner: through an in-depth analysis of the drawing, we experience the work itself in a more nuanced way and vice versa. Ideas on the recursivity of media can be found in Krauss' notions of the post-medium condition and the technical support, which stand against Greenbergian media specificity. I demonstrate how the processual entanglement of *After ALife Ahead* diverges from the specificity of the medium in particular and art in general, and how this constitutes a meaningful approach on tackling the environmental crisis. As a theoretical framework, I discuss Deleuze and Guattari's notion of the rhizome as a model for relational works of art, before concluding with an elaboration on genius narratives in artworks considered as post-humanist.

The site-specificity of *After ALife Ahead* as articulated through findings of glacial sand is subject to Chapter 2.1. After a short elaboration on the emergence of *Skulptur Projekte Münster* and its connection to institutional critique, I discuss and update Miwon Kwon's proposition on site-specificity in terms of the virtual. Then, I examine James Meyer's concept of the functional site and Craig Owens' idea of the allegorical in order to think site-specificity not as bound to a territory but as a symbolic space. The chapter is summed up in a discussion of the movie

[62] Ströbele 2017, p. 44.

[63] See Klee 2018.

Snowpiercer and its relation to the symbolism of ice and the consequences of human intervention in eco-systems.

Chapter 2.3. discusses the simultaneity of different temporalities as shown in *After ALife Ahead*. I elaborate on retro-futurism which could be described as memories from the future and also constitutes the grammatical tense of most post-apocalyptic media. Such non-linear entanglements of time can also be found in the movie *Arrival* as well as Nicolas Bourriaud's model of the journey-form that draws on mobility. Here, I do not argue for a diminution let alone an erasure of space, but rather an entanglement of time and space as presented in the process philosophy of Alfred North Whitehead. In the end, if we interpret works like *After ALife Ahead* as processes, this non-linear understanding of time leads to a more holistic understanding of our direct consequences in the world.

In chapter 2.4., I will explore different conceptions of life by Darwin, Bergson, Maturana and Varela, Lovelock and Margulis as well as Bennett in order to demonstrate the issue of defining life itself as a matter of inclusion and exclusion that always implies an ethical dimension. The last part becomes more clear in my discussion surrounding the profitability of animal life on the basis of *Sterile* by Revital Cohen and Tuur van Balen. Moreover, portrayals of non-carbon based life forms in the examples of the movies *2001: A Space Odyssey* and *Arrival* further complicate the definition of life. To conclude, I examine Spinoza's notion of the *conatus* that foregrounds vitality to all things and how it can be used to think of living beings in a less hierarchic and dichotomous way. The conatus also serves as a point of reference for interpreting the decentered and ahierarchical approach demonstrated by *After ALife Ahead*.

The next chapter, 2.5., focuses on ecology and the deconstruction of the binary opposition of nature and culture and its immanent relation to cyborgs. Drawing on theories like niche construction, I argue that humans have always actively altered their environment, making ideas of pristine nature nothing more than an inapplicable and offensive social construct. Then, I introduce Haraway's notion of *natureculture* that emphasizes the complexity and entanglement of the alleged opposites. Further, I discuss this mergence on the basis of the video game *Horizon: Zero Dawn*. To acquire a deeper understanding of the artificiality of nature, I examine *Biosphere 2*, a replica of Earth's eco-systems, before concluding how the logic of endless growth proposes a threat to sustainability. Finally, I turn to Guattari's

theories that advocate an overlapping of the mental, social, and environmental ecology as a means to battle the crisis.

Haraway's idea of the cyborg as a fabricated hybrid is subject to chapter 2.6. Starting from Mary Shelley's pivotal novel *Frankenstein*, I turn to the movies *Ex Machina* and *Okja* and examine their approach toward an ethics of creation. Then, I discuss the ethical dimensions of Huyghe's work by means of two hybrids from *After ALife Ahead*, the chimera peacocks and the *GloFish*. In conclusion, I argue how there are still major issues with animal rights due to their legal disposition as mere property and give examples from art history that confirm this sad truth. However, due to its reliance on hybridity, *After ALife Ahead* is interpreted as going into a different direction.

In chapter 2.7., I examine the bio-political power relations in *After ALife Ahead*. After introducing Foucault's notion of bio-power as a means to govern, control, and discipline the population, I discuss Agamben's continuation of this idea in terms of the distinction of bios and zoē. Following this, I apply these theories on HeLa cells, an immortal strain taken from black woman Henrietta Lacks in the 1950s without her consent, and highlight why they are a pivotal element of *After ALife Ahead*: they connect the real-world to the virtual world while underlying a market-driven form of evolution. Drawing on considerations on cancer and mutations, I discuss the movie *Annhilation* and its proposition of Earth being afflicted by cancer. Lastly, I turn to Povinelli's concept of geontopower, which incorporates the dichotomy between life and non-life into a bio-political framework.

Since *After ALife Ahead* is located inside an abandoned building, chapter 2.8. deals with ruins as sites of naturecultures. I argue that the ruin combines different temporalities in general but still has divergent connotations in Eastern and Western Europe. Through a short examination of other works by Huyghe, I demonstrate why ruins form a recurring motif in his œuvre. Understanding the ruin as a palimpsest or placeholder of a distinct site enables us to comprehend them in a relational and thus ecological way. My interpretation of the video game *The Last of Us* outlines the ruin as a place where nature and culture connect and leads to my reading of *After ALife Ahead* as a projection of an eco-system on a site that has always been and will always be inhabited.

The last chapter, 2.9., examines the mushrooming of post-apocalyptic media in the 21st century. After a short differentiation of the terms utopia, dystopia, and post-apocalypse, I argue why *After ALife Ahead* ranks among the latter. Then, I

question whether the consumption of post-apocalyptic media is merely affirmative of the spectacle and thus the capitalist system or if it can also act as a mode of critique. I turn to the most eschatological detail of *After ALife Ahead*—its exorbitant cost—and outline why this can be interpreted as a form of surplus denial or burning of capital. Following Jameson's quote "[…] is it easier to imagine the end of the world than to imagine the end of capitalism […]",[64] I turn to Moore's concept of the Capitalocene that identifies the commodification of nature as a resource as well as the unsustainable striving for accumulation as the main reasons for the environmental crisis. Finally, I argue that refusing the circulation of capital equals a refusal or overcoming of the Capitalocene—so long as visitors seek to directly engage with the artwork.

[64] Jameson 2003, p. 76.

2. *After ALife Ahead*

2.1. Cosmology

Cosmology is a branch of physics that is concerned with the origin, evolution, and ultimately the end of the universe. Its metaphysical framework operates on a spiritual level and describes the creation, constitution, and eschatology of the world.[65] Although both approaches make use of different methodologies, scientific as well as philosophical cosmology are concerned with exploring and describing the cosmos as well as blueprinting the order of the world. This is often achieved by assigning every being a fixed place in the universe. More than often, these blueprints were translated into drawings or paintings to visualize the organization of the world. For example, in papyrus scrolls depicting the ancient Egyptian creation myth, there is always a distinct arrangement of anthropomorphized deities symbolizing the cosmological order: [Fig. 5] there is Earth, personated as Geb, who is reclining on the ground; centrally positioned just above it is Shu, the God of air, who is holding up arching Nut, the firmament or Goddess of the sky.[66] Of course, cosmological drawings like these are often explicitly simple to understand in order to mediate the most fundamental regulations of a belief. Similar conceptions of the world can be found in any religious movements, from the mythical world tree Yggdrasil in Norse mythology to the nine circles of hell as described in Dante Alighieri's *Divina Commedia* to the Hindu belief of Earth resting on giant elephants resting on an even more giant turtle. The common denominator of such visualizations is the obligation to establish order, which is also why they rely on the establishment of a hierarchy. Returning to the example of Egyptian mythology, it is not reasonable for Geb and Nut to change places since this would suggest an upside-down representation of the world.

The preparatory drawing

In the course of the development of *After ALife Ahead*, a similar preparatory drawing can be found. [Fig. 4] At first glance, the drawing resembles a diagram or mind map:

[65] Examples of philosophical cosmologies are Pythagoras' cosmology based on number theory, Gottfried Wilhelm Leibniz' monist monadology or Alfred North Whitehead's cosmology of process. See Whitehead 1978.

[66] Weigall 2015, p. 185.

we can identify words, arrows, and connections as well as some illustrations. In the top right corner, there is an image of Surrealist artist Yves Tanguy's painting *The Storm* from 1926 that shows a deep-sea landscape including prehistoric-looking beings. To the left, "Symbiosis Co. Evol Biotic/Abiotic Organism" is written in pink, thus constituting a possible title for the drawing. Albeit its chaotic appearance that seems to relate to formal characteristics only, the drawing serves the same purpose as the cosmological representations discussed above: it structures the universe and marks the rules and obligations of *After ALife Ahead*. To derive any of the laws underlying the work, we must look at the drawing as a section of the ice rink: the horizontal line at the top represents the "existing ceiling", the dashed line in the middle the ground level of the building, and the scribbly line at the bottom the subterranean terrain of the excavations. We can check this premise by following the trajectory leading from the words "ice palast"[67] from top left to the bottom past the words "from: past artificial ice" arriving at "to: last glaciation (ice age) sand". This can be interpreted as the coincidence that during the conversion of the building, Huyghe and his team found traces of glacial sand in the ground. Additionally, there is a path diverting from the word "sand" as well as another one starting at the dashed line in the middle reading "surface concrete (cut by ostomachion logic pattern)". Both are leading to a box in the middle reading "conus textile pattern + coral". The box refers to the aquarium placed in the middle of *After ALife Ahead.* This claim is further supported by the expression "switch glass container" just below the rectangle. Another trajectory is leading to the very top of the drawing to a multi-triangular shape called "automated space" attached to the line representing the roof. The shape symbolizes the roof hatch continuously opening and closing and responsible for letting rain and other meteorological events enter the space. Following this immanent logic, we can follow a straight path from Tanguy's painting to the very bottom where the words "algae", "water sensor" and "bacteria sensor" are written—an analogy to the ocean floor filled with strange beings and plants, just like the weeds and fungi planted in the excavated ground by the artist. At the bottom of the right-hand side, the words "bee behavior infra-red + Paleolithic figure (from found clay) plasticity" refer to the hives of resident mining bees. As noted on the drawing, the hives were formed from on-site clay based on the model of Paleolithic fertility figurines. An example of such a fertility idol is also given in the

[67] "Ice palast" is the English translation of the ice rink's official name, Eispalast Münster.

catalogue accompanying *Skulptur Projekte Münster*. [Fig. 6] This is further supported by the image of such a figurine on the bottom right as well as the surrounding words “fate” and “naïve”. From here, many lines—including from the intersections of “water sensor” and “bacteria sensor” at the bottom, “chimera peacock” just above as well as a microscopic image of cells on the far right—lead to another juncture called “cancer cells incubator,” which is meant to symbolize the on-site incubator containing HeLa cells. Just above, there is another box with the words “genetic algo.“ written on it, an abbreviation of genetic algorithm. Across that, we can see one more box containing the word “mutation” which is again connected to the “bacteria sensor”. It is also linked to the “infra-red” monitoring the bees’ behavior as well as an overall “air” monitor recording temperature and carbon dioxide on the top right. All three of these boxes—the “cancer cells incubator”, the “genetic algorithm”, and the “mutation“—lead to the left-hand side to a dashed sketch of upside-down triangles reading "AR metastasis“. This is referring to the augmented reality application accompanying *After ALife Ahead*. [Fig. 7] In conclusion, the drawing conveys that the monitoring data stemming from the sensors in *After ALife Ahead* is plugged into an algorithm that controls the conditions of HeLa cancer cells inside the incubator. Depending on the cells’ proliferation, additional inverted black pyramids akin to the ones attached to the ceiling will appear on-screen when using the application—thus changing the universe of *After ALife Ahead* on a virtual scale. Pierre Huyghe stated that in the application, when two of the virtual pyramids are close to one other, they will generate a new pyramid as if reproducing.[68]

The recursive structure of *After ALife Ahead*

So what is the connection between *After ALife Ahead* and its preparatory drawing? Since the drawing highlights information on processes going unnoticed in the exhibition space, it could be seen as simply providing a better understanding of the interconnecting processes of the work. However, given the fact that not everyone visiting the exhibition was also able to study the drawing, we should view both works not as inherently dependent, but mutually supplementary of one another: a detailed examination of the drawing, as demonstrated above, automatically alters the understanding of *After ALife Ahead* and vice versa. This is an important detail

[68] Huyghe, Obrist 2018, 25min.

because it shows how neither of the works can be viewed as pure, media-specific entities, a stance propagated by proponents of formalism such as Clement Greenberg who claimed that "[P]urity in art consists in the acceptance, willing acceptance, of the limitations of the medium of the specific art."[69] For Greenberg, art should be primarily engaging with its medium instead of, for example, its history, content or context.[70] However, this reasoning does not seem applicable to *After ALife Ahead* without arriving at a classic chicken-and-egg problem: it seems unreasonable to debate whether the eco-system or the drawing came first or which one of them is more *pure*, when, in fact, their entanglement leads to a much deeper understanding of the work.

In her essay *A Voyage to the North Sea*, Rosalind Krauss introduces the *post-medium condition* as a direct response to the inevitability of following in Greenberg's footsteps when even using the word medium, claiming that "to utter the word 'medium' meant invoking 'Greenberg'".[71] She proposes to think of the medium not as limited to an art form such as oil on canvas, but as a recursive structure: "a structure, that is, some of the elements of which will produce the rules that generate the structure itself […]"[72] This is important because it undermines the absolute, transcendent categorizations used by Greenberg to define a medium. Krauss' understanding of the medium as a recursive structure allows it to become a feedback loop, the shaping and re-shaping of the medium as a tool for artistic expression. However, in her later writings, Krauss seems to return to media specificity as a necessity: in her essay *Guarantee of the Medium*, Krauss coins the term "technical support" and defines it as "the underlying matrix of [his] production."[73] Here, the medium is dissolved into a mode of artistic practice that

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[69] Greenberg 2003, p. 566.

[70] Consider the following statement concerning the avantgarde movements of the early 20th century in his essay *Avant-Garde and Kitsch*: "Retiring from the public altogether, the avant-garde poet or artist sought to maintain the high level of his art by both narrowing and raising it to the expression of an absolute in which all relativities and contradictions would be either resolved or beside the point. 'Art for art's sake" and 'pure poetry' appear, and subject matter or content becomes something to be avoided like a plague." Greenberg 1989, p. 5.

[71] Krauss 2002, p. 6.

[72] Krauss 2002, p. 6-7. Further, Krauss mentions Joseph Kosuth's work *Art as Idea as Idea* (1969) to show that without media specificity, questioning the essence of art does not consist of questioning the medium but ideas and conceptions of art itself.

[73] Here, she refers to the car as a technical support in the work of Ed Ruscha. Krauss 2009, p. 142.

might run like a thread through the œuvre of an artist, but is ultimately disconnected from any kind of physical constraint. Although anything can become a medium or serve as a "technical support", the artist's choice is always specific. Krauss writes

> Each of these supports allows the artists to discover its 'rules', which will in turn become the basis for the recursive self-evidence of a medium's specificity. If such artists are 'inventing' their medium, they are resisting contemporary art's forgetting of how the medium undergirds the very possibilities of art.[74]

Here, Krauss does not necessarily reconcile with Greenberg's ideas on the purity of media—this becomes explicit when reading her approach as stemming from a structural rather than an ontological point of view. In this sense, the rules of the technical support rather outline a medium instead of entirely presupposing it. In the case of *After ALife Ahead*, a variety of media can be found: the eco-system, the augmented reality application, the hermit crab, the incubator, the architecture, to name but a few—but is there really any form of technical support connecting them except for the non-physical concept of relationality? In the broadest sense, *After ALife Ahead* takes on the form of an environment or installation and could thus be subsumed under Krauss' notion of the post-medium condition. Still, considering the plentitude of artworks taking on an installational character, what is to gain from this unspecific labeling is up for debate—especially when outside of the debate over media specificity, a very real crisis is happening. As T.J. Demos outlines:

> As is the case in with our so-called post-natural condition, where nature can no longer be seen as discrete from human activity, art's autonomy is all the more untenable when faced with ecological catastrophe.[75]

Instead of focusing on definitions of the medium in order to classify art, we should turn to contemplating how artistic practices can shape our understanding of the relation between art and nature—and what can be done to engage in the battle against ecological catastrophe. Here, art is part of a variety of cultural practices that we can use to gain a better understanding of our environment: over the course of this thesis, I will introduce various films, shows, and video games tackling very similar topics to *After ALife Ahead*. The main difference between these pop-cultural works and a work of art is their social context: where and when they may be consumed and by whom. *After ALife Ahead* was only accessible over the very limited time span of *Skulptur Projekte Münster.* Even as an exhibition of art in public

[74] Krauss 2011, p. 19.

[75] Demos 2016, p. 120.

space, it is *still* an art exhibition, meaning it attracts art critics, art historians, art buyers, gallerists, students of the arts and art history, and people interested in the arts. Without delving deeper into the social constitution of the art world, I want to make clear that the contextualization of *After ALife Ahead* in terms of its creation, financing, mediation, exhibition, and contemplation is what makes it a work of art, and not its medium specificity.

However, the post-medium condition and the cosmology of *After ALife Ahead* bear some striking similarities in terms of the recursive structure. Just like Krauss' theory on the emergence of a medium, the elements in Huyghe's work are mutually dependent and even constitute one another. To stay in Krauss' vocabulary, the technical support of *After ALife Ahead is* the recursive structure: the relations between the elements deconstructing the binary oppositions present in the work. This happens in two ways: on the one hand, we can observe this quite literally, for example, in the placement of the glacial sand found in the ice rink inside the aquarium. Here, the dichotomy of inside and outside becomes blurred—does the border demarcating the outside of the ice rink and the inside of the aquarium even bear any significance when their content is the same? On the other hand, there are relations present in *After ALife Ahead* that continually generate new forms of the work. For example, the periodic opening and closing of the roof hatch allows for the intrusion of rain, seeds, and animals within the architecture. Over the course of the exhibition, plants technically alien to *After ALife Ahead* prospered inside it and pigeons entered through the shattered windows of the ice rink. These alterations to the work, that only happen over the course of time,[76] were unplanned, but not unintended by Pierre Huyghe—in fact, they are already noted on the preparatory drawing.[77]

In conclusion, I think that *After ALife Ahead* and its preparatory drawing respectively visualize the recursive structure in a much more fundamental way than in terms of medium: through the integration of unexpected consequences over time, Huyghe's works—and eco-relational works relying on the same principle[78]—actually

[76] Please refer to chapter 2.3. for a more extensive discussion of time and process philosophy.

[77] For example, see the comment "rain" right next to the shape of the automated space on the drawing.

[78] For example, the open-air cultivation of butterflies in *The Lover* by Kristina Buch (2012) or Ian Cheng's *Emissaries*-trilogy (2015-2017), a simulation of the interconnected processes of cognition and evolution.

diverge from the formalist concept of media specificity that privileges ontological immutability. This is positive because it allows for political implications, which are the most important impulse art can contribute in times of ecological crises. Furthermore, the difference between a work of contemporary art and a work of popular culture resides in their context of presentation—although art might sometimes seem more compelling than, for example, a novel, there really is no point of establishing a hierarchy outside of the social context of art and media.

The genius myth

Producing a cosmological drawing puts Pierre Huyghe in the tradition-rich position of an artistic creator. This is further encouraged by statements like the following on working with animals: „You frame a rule, set the conditions, but you cannot define how a given entity will interact with another…"[79] So, where is the difference between Huyghe and the still pervasive myth of the artistic genius? First, it is important to note that a multitude of autonomous agents are involved in *After ALife Ahead*: animals, plants, and non-living beings are connected by various rules, processes, and actions. Human visitors are left to figure out what connects these elements and processes themselves; moreover, they need to decide whether Pierre Huyghe fits the genius narrative or not. There is no distinct hierarchization between these agents that would determine their role in the system—none of them plays a more important role than the other since they are interdependent. In fact, *all* of them are required for *After ALife Ahead* to function.

The preparatory drawing suggests a systemic structure. Like many of the works of Pierre Huyghe, *After ALife Ahead* constitutes a bio-technological system.[80] Jack Burnham was the first to describe systemic art and its emphasize on relations: "The specific function of modern didactic art has been to show that art does not reside in material entities, but in relations between people and the components of their environment."[81] This also contradicts both Greenberg's and Krauss' definition

[79] Such remarks are faintly reminiscent of a famous statement attributed to the prime example of the modernist genius cult, Johann Wolfgang von Goethe: „A Genius does not follow the rules but creates them." See also Michalska 2013.

[80] Earlier works of the artist also show tendencies of systemic structures. For example, *Streamside Day* from 2003 deals with the translation of a system into other media like films. Barikin 2012, p. 168.

[81] Burnham 1968, p. 31.

of the material premises of a medium. An early example is Hans Haacke's *Rhine-Water Purification Plant* from 1972, an ahierarchical bio-technological system that consists of a large water basin filled with water from the river Rhine, which is constantly filtered with charcoal and sand. [Fig. 8] Inside, a couple of goldfish swim around to demonstrate "the successful construction of a life-supporting habitat using technology."[82] Although *Rhine-Water Purification Plant* serves as a model for techno-biological systems art, it does not seem to question the very foundation it is based on—neither biology nor technology. In his review of *Skulptur Projekte*, Benjamin H. D. Buchloh directly compares the system approaches of Huyghe and Haacke:

> While for Haacke systems theory could still marshal a critical and rationalist Enlightenment culture in order to displace transhistorical artistic myths by positivist truth value, Huyghe's dystopian displays of interconnected social, biological, and physical systems appear as the technologically mediated stages on which the imminent relapse of enlightenment into myth and ecological catastrophe can be most dramatically performed.[83]

It seems that in *After ALife Ahead*, both the ideals of Enlightenment as well as the historicization of systems art are subverted for the sake of a post-anthropocentric scenario. Additionally, the setup of Haacke's work is simple enough to comprehend in an instance, whereas the composition and constitution of *After ALife Ahead* are much more ambiguous. In contrast to the mythological cosmological drawings that rely on clear hierarchization, the structure of *After ALife Ahead* could be described with Gilles Deleuze and Félix Guattari's concept of the rhizome. The rhizome relies on six principles:

> 1 and 2: Principles of connection and heterogeneity: any point of a rhizome can be connected to anything other, and must be. […] A rhizome ceaselessly establishes connections between semiotic chains, organizations of power, and circumstances relative to the arts, sciences, and social struggles.[84]

The elements of a rhizome can be of any kind, but they are obligated to be connected. In *After ALife Ahead*, every agent is related to the other agents in some way, even though they are demonstrating alterity in a heterogenous way. The rhizome *holds* them together.

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[82] Demos 2016, p. 47.

[83] Buchloh 2017, p. 285.

[84] Deleuze, Guattari 2005, p. 7.

> 3. Principle of multiplicity: it is only when the multiple is effectively treated as a substantive, "multiplicity," that it ceases to have any relation to the One as subject or object, natural or spiritual reality, image and world.[85]

It is essential that a rhizomatic structure cannot be reduced to its elements—this is because their relations constitute the rhizome. In Huyghe's work, for example, the mining bees are not contingent on the rhizome, but their relations to data monitoring or their hives' connection to the ground of the ice rink is.

> 4. Principle of asignifying rupture: against the oversignifying breaks separating structure or cutting across a single structure. A rhizome may be broken, shattered at a given spot, but it will start up again on one of its old lines, or on new lines.[86]

Simply put, cutting off an element of the rhizome does not destroy the structure, but instead generate new rhizomes. This is also evident in *After ALife Ahead*: shortly after the inauguration, animal rights activists protested the participation of chimera peacocks in the artwork which led to their removal.[87] However, the eco-system was still able to function without them, albeit in a different way.

> 5 and 6. Principle of cartography and decalcomania: a rhizome is not amenable to any structural or generative model. […] *a map and not a tracing*.[88]

The rhizome is not supposed to represent a finite, hierarchical structural model. Comparing the rhizome to a map allows for its starting at any given point, whereas the tracing always needs to follow something that was there *before*. In this way, we might call *After ALife Ahead* the map and the preparatory drawing a tracing of it.

The fact that all elements and processes are contingent to constitute the eco-system reveals the rhizomatic structure of *After ALife Ahead*. Any further process of reduction would constitute a completely new work. For example, if the shell of the Conus textile was taken out of the system, there would be no rhythm for the roof hatch to open and close. If the roof hatch could not open anymore, no meteorological events would be able to enter the system, which would lead to a decrease in mutations in the augmented reality application. Pierre Huyghe created an interdependent system that ceases to exist when taken apart. Secondly, in

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[85] Deleuze, Guattari 2005, p. 8.

[86] Deleuze, Guattari 2005, p. 9.

[87] Kock 2017, n.p.

[88] Deleuze, Guattari 2005, p. 12.

interviews like cited above, the artist seems to detach himself from his work. *After ALife Ahead* stands out through its independence from human interference, which includes the cultivation of genius narratives. The artist stated: "It's a way to shift the centrality of the human position—whether as a maker or receptor. Indiscernibility and unpredictability are among other operations that could shift this position."[89] Although Huyghe did create the work, what happened (and could have happened) to *After ALife Ahead* was impossible to predict. So, does intentional unpredictability belong to the genius narrative or not? Although the artist is evidently maker or creator of the cosmology of *After ALife Ahead*, this does not make him an artistic genius, as this is a concept only attached to people *a posteriori* by the means of discourse and market value. Additionally, Huyghe himself might be more interested in subverting such a denotation, considering his interest in dethroning humans from being the pride of creation. In this way, it is left for art critics, historians, and visitors of *After ALife Ahead* to decide whether Pierre Huyghe comes close to a genius or not. The same goes for defining its medium: although Krauss' notion of the technical support might be useful when referring to the material constitution of *After ALife Ahead*, it is too limiting to include all spatial and temporal "lines of flight"[90] made by the work. Therefore, visitors need to engage with it on their own terms, thus creating a new recursive structure between the work and themselves that can form the basis for political action.

2.2. Site-specificity

Before discussing the site-specific aspects of *After ALife Ahead*, it is reasonable to engage with the history of *Skulptur Projekte Münster* since it is primarily concerned with art in public space. The founding of decennial exhibition in 1977 is based on a unique creation myth. This is stated in the following narrative by founding director and curator Kasper König: when the privatization of a provincial bank caused an uproar in Münster in the 1970s, the bank decided to pay for a sculpture to be placed in public space in an attempt at reconciliation with the public.[91] Since the rather conservative Münsterians could not warm toward the kinetic sculpture *Drei rotierende Quadrate* by George Rickey, curator Klaus Bussmann decided to

[89] McDermott 2017, n.p.

[90] Deleuze, Guattari 2005, p. 9.

[91] Schambelan, König, Franzen, Platz 2007, p. 189.

assemble an exhibition on modern sculpture including an open-air presentation of contemporary works in order to educate people on art in public space.[92] Although certainly not an instant hit, this overly didactic approach culminated in *Skulptur Projekte* true to type. Nowadays, *Skulptur Projekte* takes place every ten years with the last exhibition attracting over 600.000 visitors.[93] The spectacle of the *Venice Bienniale* in conjunction with *documenta* in Kassel and *Skulptur Projekte Münster* has been deemed the *Grand Tour of Contemporary Art*.[94]

A brief history of site-specificity in art

The common denominator of the works commissioned by *Skulptur Projekte* is their placement outside the city's museums and galleries. When a work is created for somewhere other than a white cube, it does not only refuse the physical constraints of a gallery space but its ideological premises, too:

> To be "specific" to such a site, in turn, is to decode and/or recode the institutional conventions so as to expose their hidden yet motivated operations—to reveal the ways in which the institutions mold art's meaning to modulate its cultural and economic value, and to undercut the fallacy of art and its institutions' "autonomy" by making apparent their imbricated relationship to broader socioeconomic and political processes of the day.[95]

According to Miwon Kwon, site-specific art of the late 1960s and early 1970s particularly and institutional critique in general have an almost revolutionary quality to them. Therefore, it is odd that art in public space in Münster was propagated by a privatized bank for the first time. However, the significance of site-specificity changed over the years. Art historian James Meyer clarifies the term by introducing the following distinction of a site: The *literal site* is "an actual location, a singular place"[96] that is formally determined by the constraints of a physical place, for example, a monument. The *functional site*, on the other hand, does not depend on physicality but rather on "a process, an operation occurring between sites, a mapping of institutional and textual filiations and the bodies that move between

[92] Skulptur Projekte Archive n.d.

[93] Monopol Magazin 2017, n.p.

[94] Artforum International, September 2017, p. 276.

[95] Kwon 1997, p. 88.

[96] Meyer 2000, p. 24.

them (the artist's above all)."[97] The definition of the functional site traces back to Craig Owens' conception of *the allegorical* created to describe the work of Robert Smithson. In his pivotal essay *The Allegorical Impulse: Toward a Theory of Postmodernism*, Owens writes:

> In an allegorical structure, then, one text is read through another, however fragmentary, intermittent, or chaotic their relationship may be; the paradigm for the allegorical work is thus the palimpsest.[98]

Thus, the functional site might not relate to a place in a direct, "that-has-been!"[99] kind of way, but in a convoluted, referential, or even random way. Beyond that, it is important to note that by stating the palimpsest as paradigmatic for an allegorical structure, there is also an evident emphasis on adopting and re-using existing things, which implies an ecological or processual way of thinking.[100]

Traces of site-specificity in *After ALife Ahead*

The site-specificity of *After ALife Ahead* manifests in a multitude of ways: to visit the work, one had to leave the small old town of Münster and submit to a 15-minute bus ride[101] to an industrial area northwest of the city center. [Fig. 9] There, in a parking space off the federal highway just next to a *Burger King*, the former *Eispalast Münster* is located, now home to Pierre Huyghe's eco-system. The ice rink had been fit for demolition since 2016 due to an unreasonable cost of maintenance of the outdated technology. When Huyghe asked to utilize the 2600 m² large hall, owner Hans-Joachim Bierbaum stated they may do whatever they want as it will be bulldozed anyway.[102] Just like in almost every European city now, housing demand increases steadily while available accommodation is scarce. On the off-center grounds of the former ice rink, investors plan to build up to 500 apartments in the coming years. If an important factor in choosing the site were the remains of an existing building, how does the ice rink in *After ALife Ahead* become a functional

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[97] Meyer 2000, p. 25.

[98] Owens 1980, p. 69.

[99] Barthes 1981, p. 76.

[100] The paramount example of the palimpsest is thus the ruin, which is discussed in chapter 2.8.

[101] Traditionally, most works commissioned for *Skulptur Projekte* are located in the city center in order to encourage a scavenger hunt-like exploration of Münster. See also Fig. 9.

[102] Kalitschke 2017, n.p.

site? Perhaps an ice rink was chosen to address the absurdity of the simulation of arctic climates whose maintenance ironically contributes to climate change like in the skiing halls in the desert of Dubai. Furthermore, as shown in the film *Skulptur Projekte Münster 2017*, work on the project begun with cutting the existing concrete floor followed by excavations into the ground.[103] The concrete slabs have been cut according to a method inspired by the Ostomachion by Archimedes, a mathematical logic puzzle. Starting with a square form, ten cuts are necessary to obtain 14 different shapes: triangles, quadrilaterals, and pentagons. The goal of the game is to find as many ways as possible of combining these parts into all kinds of figures, resulting in a myriad of possibilities.[104] In addition, the Ostomachion has been recently rediscovered in the field of cybernetics, where it is considered to be groundbreaking regarding questions of linking logic and the foundations of life.[105] The literal cutting through the foundation of reason revealed a surprise for Huyghe and his team: During the up to five meters deep excavations, they stumbled upon glacial sand from the Saalian glaciation dating back to around 160.000 to 140.000 years ago.[106] Since the last glacier was located in Münster, it seems possible that the *Eispalast* was erected on the very grounds of a former ice mountain. Additionally, the use of the Ostomachion might have had another, purely formal background: the slices of concrete that had been placed all over the grounds as well as inside the aquarium evoked a physical resemblance to ice floes. [Fig. 10] In fact, many perspectives of *After ALife Ahead* bear similarities to Romanticist painter Caspar David Friedrich's *Das Eismeer* from 1823. [Fig. 11] There, the rigid ice blocking the view symbolizes the feeling of reaching a metaphysical deadlock. In Huyghe's system, the concrete ice floes demarcate the ground level; they are the same height as the former frozen surface of the ice rink. Therefore, they mediate between the dug-up grounds and everything above. Some of the concrete pieces even found their way into the aquarium, along with glacial sand from the very same grounds. Their relation to the site is expressed in a functional way, to use Meyer's definition: as noted on the preparatory drawing to *After ALife Ahead*, the use of ice on this site ranges from former natural ice of the Saalian glaciation to the use of artificial ice for

[103] Skulptur Projekte Münster 2017a, 35min.

[104] Netz, Acerbi, Wilson 2004, p. 71.

[105] von Hantelmann 2018, p. 16.

[106] Colleoni 2009, p. 1.

the ice rink in modern times. Therefore, we could say that the site of *After ALife Ahead* itself is a palimpsest of ice.

Ice as a metaphor

The ecological symbolism of ice also plays a major role in the 2013 movie *Snowpiercer* by Bong Joon-ho, where the entire surface of Earth is frozen due to a failed attempt at counteracting global warming using geo-engineering. This highly disputed technology suggests an active human intervention to the environment to bring rising global temperature to a halt. Ironically, one of the biggest supporters of geo-engineering is Paul Crutzen, who popularized the notion of the Anthropocene—in a controversially received paper, he proposed to inject sulfur particles into the stratosphere to cool down the planet.[107] Although humans have left an irrevocable imprint on Earth for thousands of years, the magnitude of human interference with the environment has risen exponentially over the last 70 years—a process also known as the *Great Acceleration*.[108] By combining ecological and economic data including the rise in world population, fertilizer consumption, but also the number of McDonald's restaurants, scientists of the *International Geosphere-Biosphere Programme* (IGBP) found that all this data correlates in their rapid increase beginning in the 1950s.[109] Tantamount with the steady expansion of neo-liberalism, the period after World War II marks a turning point in humanity's footprint on the planet—although, of course, the main perpetrators can be found in the affluent societies of Western Europe and North America. The proposition of an even greater intervention in the environment without any knowledge of the consequences makes geo-engineering an inappropriate tool for handling climate change not because of its *unnaturalness* but because of its irresponsibility: instead of restraining themselves, humans defend their right to put even more pressure on the planet.

In *Snowpiercer*, this undertaking backfired and led to an immediate ice age. Only about a thousand humans were able to save themselves. At the beginning of the film, they live on board the *Snowpiercer*, a high-tech train going around Earth in circles. The train is the only site where life still exists, but a two-class-system has pushed the poor inhabitants to the back of the train while the rich live a life of luxury

[107] Crutzen 2006, p. 211.

[108] Ellis 2018, p. 52.

[109] Steffen, Sanderson, Tyson et al. 2004, p. 14-18.

at the front. One day, protagonist Curtis Everett decides to put an end to their miserable existence by fighting his way from the back of the train to the front, where the highly worshipped inventor of the *Snowpiercer*, Minister Wilford, lives. When Everett finally comes face to face with the antagonist, over three-quarters of the train inhabitants were already killed. Wilford reveals to him that this was his plan all along: to kill off most residents in order to avoid overpopulation and re-establish the equilibrium of the train's eco-system. At around the same time, Everett finds out that the biosphere of Earth has begun to thaw, thus making the planet inhabitable again. This leads him to destroy the train because even the ice-cold, apparently lifeless world seems more livable than a train filled with self-absorbed humans.

In analogy to *Snowpiercer*, the ice-specific entanglement might point to the freezing cold human behavior toward land in general: their self-proclaimed freedom to build an artificial ice complex on top of a former glacier, and, in the future, mass-produced apartments on top of that shows no respect for the uncorrupted state of the grounds but only an interest in self-involved usage for maximum profit. In her book *One Place after Another: Site-Specific Art and Locational Identity*, Miwon Kwon states that in contrast to the artists of the 1960s and 70s, contemporary site-specific artistic practices emphasize social problems "[…] in order to relativize art as one among many forms of cultural work, current manifestations of site specificity tend to treat aesthetic and art historical concerns as secondary issues."[110] In *After ALife Ahead*, many references to the installation's immediate surroundings throughout history can be drawn: from the melted glaciers of the Saalian glaciation to the ruinous site in the present to the upcoming sheltering in the future, the site has and will always be social—even if one day, there won't be any humans left to determine its usage. Here, it seems crucial that the site-specific implications of the work move beyond traditional conceptions of the site as territory—similarly to Meyer's definition of the functional site as compared to the literal site. For example, where can we localize the augmented reality application—in some server farm or in the mobile phone in the hands of a visitor? There is no direct, one-dimensional trajectory between the site and its connotation, but instead a multiple entanglement between physicality, virtuality, temporality, discursivity, and visuality. Staying with the example of the augmented reality application, its site-specificity encompasses the actual space of the exhibition (which is verified via GPS) as well as the relations to

[110] Kwon 2002, p. 24.

the application's place of creation[111] and the server's position; the virtual space of the program on the mobile phone's storage; the duration of *Skulptur Projekte* as well as each individual's execution of the application; the discourses rooted in geology, biology, philosophy, and aesthetics traversing the work; and the explicit aesthetic references made through the choice of the visual elements. For the discourse on site-specificity in art history, this means that we can no longer think of the site as determined by physical constraints, but as a deterritorialized[112] locality—especially when writing on art that engages with the internet. Kwon offers a similar diagnosis in her writings.[113] In any case, site-specificity can no longer only be approached from a territorial perspective, but must include fictional and virtual spaces alike.

2.3. Temporalities

In *After ALife Ahead*, a multitude of temporalities can be found: there are references to the past, for example in the glacial sand dating back to the geological time of the Middle Pleistocene (780.000 - 126.000 BC), in the beehives sculpted akin to Venus figurines of the Upper Palaeolithic or Late Stone Age (50.000 - 10.000 BC),[114] and in the use of the Ostomachion by Archimedes of Syracuse (287 - 212 BC). However, there are also allusions to the future that go beyond the use of relatively new techniques such as artificial cell growth or augmented reality applications:[115] Pierre Huyghe refers to the interior design of the ice rink as a "punctum of space",[116] a term borrowed from Roland Barthes who described the punctum of a photograph as a subjective incident or "that accident which pricks me (but also bruises me, is poignant to me)."[117] Here, Huyghe especially refers to the inverted black pyramids on the ceiling which bear witness to the anticipation of the near future anno 1981,

[111] The application was programmed by Luxloop who have studios based in Los Angeles and New York City.

[112] The process of deterritorialization refers to a physical space being replaced with a new non-physical or imaginary space. Deleuze & Guattari 2000, p. 257. Additionally, Arjun Appadurai concludes that mobility is the driving force of deterritorialization. Appadurai 1990, p. 37-38.

[113] Kwon 2002, p. 165.

[114] The Venus of Willendorf is one of the oldest Venus figurines found and dates to 30.000 BC.

[115] Strictly speaking, as these techniques are feasible and reproducible in the present, they are not part of the future.

[116] Huyghe, Obrist 2018, 25min.

[117] Barthes 1981, p. 27.

the year of completion of the *Eispalast*. Immediately tying his association to his own age and especially his youth during the 1980s, Pierre Huyghe seems to project himself to be the ideal spectator, or at least anyone who is a middle-aged Western European white man. As someone who was born more than ten years after the ice rink's completion, "futuristic" ranks among the few things I would have never associated with this type of architecture—instead, to me, postmodern buildings connote long-gone times, considering their widespread eradication over the last years. However, since Huyghe chose the notion of the punctum with its highly subjective meaning, we can speculate that visitors have had a variety of associations with this space. Clearly, these associations do not emerge in the visitors' minds all of a sudden—instead, they are mediated by all kinds of images and media that are already a part of the visitors' mindscape. Therefore, when Huyghe addresses the ice rink as a punctum of space, he foregrounds the ability of experiencing *After ALife Ahead* only in relation to already existing images, thus denying Modernist ideas of presence and replacing them with a model of complex and multiple networks of mediation.[118]

Speculative futurism

Strangely, the 1980s form of aesthetics known as retrofuturism is much more inter-generationally intelligible: in the section on *After ALife Ahead* of the *Skulptur Projekte* catalog, there is a pink computer-generated image of a black mountain range in perspective, an archetype of retro-futurist aesthetics. [Fig. 12] Despite the familiarity with such images due to their mushrooming on the internet in the 2010s, it seems pivotal that retro-futurism has very little in common with futurism, as Elizabeth Guffey and Kate C. Lemay write: "If futurism is a term that describes our anticipation of what is to come, then retrofuturism describes how we remember these visions."[119] Following this definition, we could also describe the phenomenon of a multiplicity of temporalities bound together by a single space as speculative futurism. In fact, this is quite similar to how time is understood in most post-apocalyptic media, and what Eva Horn refers to when determining the *future perfect*

[118] Please also see chapter 2.1 for a wider discussion of modernist ideas of media specificity and purity.

[119] Guffey, Lemay 2014, p. 434.

as future tense of such narratives.[120] In this light, Huyghe's references to retro-futurism point to the entanglement of the past, the present, and the future or the non-linearity of time—a recurring motif in his work. For example, *Cambrian Explosion 10* from 2014 simulates the living conditions of the geologic boundary between the Proterozoic and the Cambrian eon approximately 540 million years ago. [Fig. 12] The title refers to the sudden appearance of multi-cellular life forms on Earth, some of which are still evolving up to this day. Inside the 175 x 200 x 200cm big saltwater aquarium filled with sand, a huge volcanic rock is floating on top. Further, there are horseshoe crabs and arrow crabs inhabiting the space, whose ancestors can be traced back to this crucial period. *Cambrian Explosion 10* seeks to visualize the state of the world an incredibly long time ago—thus connecting a time when Earth's surface was still split between supercontinents Gondwana and Euramerica to visitors of an exhibition at the *Foundation Louis Vuitton* in 2018.

The film *Arrival* (2016) by Dennis Villeneuve attempts to conceptualize time in a non-linear way. When extraterrestrials reach Earth in massive black monoliths, the US-American military hires linguist Louise Banks to decode their language and thus find out their intentions for visiting the planet. During the process, she repeatedly experiences visions from an unknown yet familiar future—a form of speculative futurism, so to speak—leading her to the assumption that the newly-learned language also influences her way of thinking. Since the extraterrestrials communicate in a form of writing that is subject to change during the speech act, she concludes that they must have a different, non-linear understanding of time itself. Upon this realization, Banks notices that through the process of studying their language, her concept of time is fundamentally altered as well: she no longer grasps time as linear and causal due to a blurring of memories, thoughts, and visions. In turn, this equips her with the ability to change past and future scenarios and even travel between them. This phenomenon presupposes a direct and singular relation between time and space, meaning that a change in time will always result in a change in space as well.[121] Consequently, the space-time-unity enables plenty of unforeseen complications at the slightest change of a small detail. Sometimes

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[120] Horn 2018, p. 17. See also chapter 2.9.

[121] In contrast, the theory of multiple or parallel universes assumes an infinite number of times and spaces that exist independently from one another. This theory draws on quantum mechanics, claiming that a new universe emerges from every quantum event. The cartoon *Rick and Morty* (since 2013) draws upon this concept. See also Kaku 2004.

likened to chaos theory, movies like *The Butterfly Effect* (2004) draw upon the same idea. Of course, in reality, this one-dimensional thinking of a recursive structure between time and space is not (yet) feasible—if it was, visitors of *After ALife Ahead* might find themselves scattered across the timeline by simply engaging in the exhibition space.

The journey-form

These leaps in time have been discussed by Nicolas Bourriaud in *The Radicant*, where he proposes the journey-form, an artistic practice that seeks to combine different elements across time and space.[122] Not unlike many epic tales such as the *Iliad* or the *Odyssey*, Bourriaud states:

> If time today has been spatialized, then the heavy presence of the journey and of nomadism in contemporary art is linked to our relationship with history: the universe is a territory, the entire dimensions of which can be traveled—the temporal as well as the spatial.[123]

The journey-form can take upon various manifestations: for example, the process of digging into the ground can be interpreted as digging into time. As the Geological Time Scale (GTS) is determined by the layers of the earth, digging into the ground of the ice rink revealed a history of Earth due to findings of glacial sand that stem from the Saalian glaciation during the Pleistocene. The coldest period of the ice age is called Drenthe ice advance and occurred about 150.000 years ago.[124] In anthropology, this also marks the emergence of Homo sapiens in Africa, while Homo neanderthalensis was still the only hominid species living in Europe.[125] Stratographical investigations further suggest that when humans began to spread across Earth, thus becoming a global species, they were also "taking the rest of the biosphere with them."[126] This led to an irrevocable change in the environment that, without the emergence and proliferation of Homo sapiens, would not have occurred.[127] In fact, Pierre Huyghe's work *Timekeeper* from 1999 uses a method

[122] Bourriaud 2009, p. 118.

[123] Bourriaud 2009, p. 124.

[124] Land, Lauer, Winsemann 2018, p. 241.

[125] Grupe, Christiansen, Schröder et al. 2012, p. 27.

[126] Ellis 2018, p. 114.

[127] For a broader discussion of the recursive structure of ecology, please see chapter 2.5.

similar to stratography: a hole drilled into the wall reveals the existing layers of paint from previous exhibitions. [Fig. 14] *Timekeeper* bears a formal resemblance to annual growth rings of trees, emphasizing the process of growth and spatializing the journey in time.

For Bourriaud, this is symptomatic of contemporary art in general and the practices of Pierre Huyghe in particular: he locates the beginning of the contemporary period in 1989, commonly viewed as the beginning of globalization.[128] Nineteen eighty nine was also the year of the seminal exhibition *Magiciens de la terre*, curated by Jean-Hubert Martin and exhibited from May 18th to August 14th, 1989, at the *Centre Georges Pompidou*. This exhibition famously displayed works from non-Western artists on an equal footing with those of established Western artists. Bourriaud, however, identifies such events as a "machine for dissolving any genuine singularity beneath the mask of a 'multiculturalist' ideology, a machine for erasing the origins of the 'typical' and 'authentic' elements that it propagates on the trunk of the Western technosphere."[129] There are two important observations in this statement: first, while it may be true that *Magiciens de la terre* was not a decolonized exhibition at all,[130] the exhibition did give equal spaces of representation for Western and non-Western artists alike—although it still presented the works in the Eurocentrist setting of the art museum. Secondly, Bourriaud is asking for a "genuine singularity" connecting these different artworks, thus suggesting that a work of art always needs to be defined in the Western categories of aesthetics in order to become part of the canon. In the quote below, it becomes clear that Bourriaud's theories in *Radicant* are not decolonized either: after his critique of "postmodern ideology", he proposes the concept of *altermodernity*:

> What matters today is to translate the cultural values of cultural groups and to connect them to the world network. This "reloading process" of modernism according to the twenty-first-century issues could be called altermodernism, a movement connected to the creolization of cultures and

[128] Belting 2009, p. 40. To be precise, there have been developments of globalization before, for example, the spreading of Homo sapiens across the globe as mentioned above or the colonization of the Americas beginning in 1492.

[129] Bourriaud 2009, p. 13.

[130] "Does the mere inclusion of non-Western artists in this exhibition question the basic assumptions on which past similar exhibitions were based?" is just one question Rasheed Araeen poses in his review of *Magiciens de la terre*. Araeen 2007, p. 157.

> the fight for autonomy, but also the possibility of producing singularities in a more and more standardized world.[131]

On the one hand, Bourriaud clearly desires a sort of global modernity albeit modernity being a Western phenomenon. On the other hand, he quotes turn-of-the-century ethnographer Victor Segalen as a source for the "creolisation of cultures", Bourriaud's alternative to a "multiculturalist" ideology. Segalen's fragmentary work *Essay on Exoticism: An Aesthetics of Diversity*, published in 1919, heavily criticized the devouring of local cultures through colonialism and the resulting monotonous Western mainstream way of life. In this sense, Segalen ranks among the pioneers of Post-colonialism—still, how does Bourriaud's assignment of a *sophisticated* Modernist European man as a figurehead for altermodernity not simply repeat the same mistakes from a century ago? In order to seriously strike new paths we need to acknowledge that "[i]t matters what thoughts think thoughts. It matters what knowledges know knowledges. It matters what relations relate relations. It matters what worlds world worlds. It matters what stories tell stories."[132] Although Segalen's ideas are still prolific for criticizing colonialism today, Bourriaud's proposal of altermodernity based on his work is riddled with blind spots. For example, a privileged approach toward cosmopolitanism is already evident at the very beginning of the preface where Bourriaud recites all the cities he visited while writing *The Radicant*.[133] Undeniably, there has been a rapid increase in terms of movement in the past 25 years,[134] but Bourriaud seems to disregard a distinction of voluntary leisure travel and a whole spectrum of forced mobility, from work-related relocation to seeking refuge and deportation.[135] In this light, it is important to credit Bourriaud with the attempt to capture contemporary artistic practices and provide a theoretical framework. Some of his considerations are quite valuable, for example, the journey-form in the discussion of Pierre Huyghe's work, which also corresponds to Hal

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[131] Nicolas Bourriaud, Keynote speech to the 2005 Art Association of Australia and New Zealand Conference, cited after Tlostanova 2017, p. 26.

[132] Haraway 2016c, p. 35.

[133] These cities are primarily in the Western world, perhaps with the rather weak exceptions of Kyiv, Havana, and Moscow. Bourriaud 2009, p. 9.

[134] In fact, sociologist John Urry speaks of a "new mobility paradigm" in the 1990s that now defines contemporary social life. See Urry 2007.

[135] Perhaps such a distinction becomes most evident in Bouchra Khalili's works *The Mapping Journey Project* (2008-2011) and *The Constellations Series* (2011).

Foster's proclamation of the "ethnographic turn".[136] But in the end, the broader framework of altermodernity is technically just another approach toward a globalized homogenization of culture with the misconception of a universal language in art. So, I have to ask: who else would have been able to exhibit a work like *After ALife Ahead* besides someone with access to sufficient funding, like Pierre Huyghe?

Notes on Alfred North Whitehead's philosophy of process

Another definition of the journey-form highlights its overall vague and bloated character that may be applicable to a lot of things:

> […] a new type of form is appearing, the journey-form, made of lines drawn both in space and time, materialising trajectories rather than destinations. The form of the work expresses a course, a wandering, rather than a fixed space-time.[137]

In fact, it is possible to *dig even deeper* into time when discussing the journey-form. In the end, the journey-form is simply a mapping of ideas, narratives, and information—similar to the rhizome—ultimately leading to time becoming space.[138] But what if time was even more fundamental than that? In her review of Huyghe's 2012 contribution to *documenta 13, Untilled*, Dorothea von Hantelmann concludes: "The site of the work is a site of becoming."[139] This may sound like Bourriaud's spatialization of time, but it also includes the possibility to interpret the elements and relations of *After ALife Ahead* not as objects, but as events. Comparable propositions can be found in the process philosophy of mathematician Alfred North Whitehead. Inspired by Albert Einstein's theories of relativity and the new insights of quantum physics, Whitehead founded his cosmology in 1925. His critique addresses the Newtonian worldview, according to which space, time, and matter are determinable as absolute quantities independent from each other.[140] Whitehead postulates two fallacies: "the fallacy of misplaced concreteness" marks the

[136] In the early 1990s, Foster proposed a steering towards anthropology as it takes culture as an object, is contextual in nature, and studies Otherness, among other reasons. Foster 2011, p. 669.

[137] Bourriaud 2009b, n.p.

[138] Bourriaud 2008, n.p.

[139] von Hantelmann 2017, p. 91.

[140] Haas 2016, p. 254.

"accidental error of mistaking the abstract for the concrete."[141] In philosophical discourse, this leads to reification, an unjustifiable abstraction through objectification. The "fallacy of simple location" describes the impossibility of precisely locating matter in integral units of space and time. Whitehead states that "simple location holds whether we look on a region of space-time as determined absolutely or relatively."[142] Maximilian Haas concludes that these fallacies lead Whitehead to believe that everything is transitive:

> Dinge hängen in ihren Entstehungsprozessen von anderen Dingen ab. d.h. sie konstituieren und definieren einander wechselseitig. Zudem entwickelt sich jedes Ereignis im Verlauf der Zeit, nämlich aus vergangenen Ereignissen heraus und in zukünftige hinein. Die isolierte (punktuelle und augenblickliche) Betrachtung eines Dings ist folglich eine Abstraktion von seiner relativen und transitiven Natur.[143]

Therefore, the static, localized object evolves into the processual event. In *After ALife Ahead*, things become processes: HeLa cells multiply according to the genetic algorithm, roof hatches open and close accordingly, plants grow and proliferate on the grounds. As demonstrated through the preparatory drawing, the bio-rhythm of *After ALife Ahead* is determined by the shell pattern of the Conus textile. The pattern is a compound of triangles that add up to a fractal structure also known as cellular automaton. [Fig. 15] These are often used in algorithms for random number generators, most prominently in Stephen Wolfram's Rule 30.[144] The pattern determines the appearance of the glass of the aquarium, which can be either opaque or transparent. Additionally, a score was composed using the cellular automaton. Its sound, quite similar to a steady-going heartbeat, follows another task: "as the glass switches on or off, it triggers the opening or closing of the pyramids that are on the ceiling."[145] Since the perception of time is subjective, the different species present in *After ALife Ahead* may also experience the lapse of time in a different way. Further, visitors may also dwell for different times in the exhibition,

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[141] Whitehead 1948, p. 52.

[142] Whitehead 1948, p. 50.

[143] "Things depend on other things in their creative processes, that is, they constitute and define each other mutually. In addition, each event evolves over time, from past events and into future ones. The isolated (punctual and instantaneous) view of a thing is therefore an abstraction of its relational and transitive nature." Translation by the author. Haas 2016, p. 255.

[144] Wolfram 1986, p. 128.

[145] Russeth 2017, n.p.

thus receiving various impressions. But also the exhibition itself will come to an end at some point. As Whitehead wrote in *Science and the Modern World*:

> Things are separated by space and are separated by time: but they are also together in space, and together in time, even if they be not contemporaneous.[146]

Upon regarding the elements in *After ALife Ahead* as events, the whole system not only begins to change, it also begins to live. The implication of a work of art as a living process moves beyond the Modernist understanding of an artwork as a singular object. In fact, this definition resembles the concept of art as instigated by movements of the 1960s and 70s, now subsumed under the notion of Environmental art. The works produced often used living materials as their "technical support",[147] were located outside the museum, and outlasted the duration of an exhibition many times over. One of the most prominent examples is Joseph Beuys' contribution to *documenta 7* in 1982, *7000 Eichen*. In a nutshell, Beuys decided to plant seven thousand trees across the city of Kassel as a collective, long-term performance project subtitled *Stadtverwaldung statt Stadtverwaltung*.[148] Although Beuys' work fulfills all three afore-mentioned principles, it is still quite different from *After ALife Ahead*: in contrast to Huyghe's work, *7000 Eichen* follows a linear conception of time. This difference might become clearer when relating it to the distinction between futurism and retro-futurism: like futuristic art and media, Beuys' work points toward what is yet to come in a linear, one-dimensional way; one day, the oak trees will grow and green Kassel, they will *live on*. *After ALife Ahead*, not unlike retro-futurist media, references scenarios that have been, that could have been, that are yet to come, that could have happened in the future but are already over in the present—its temporalities are entangled and impossible to trace back to a linear arrow of time. What is the relation between the archaic-seeming clay figure and the HeLa cells which have been secretly removed from Henrietta Lacks? What connects the hermit crab living inside the aquarium to the chimera peacocks outside? What relates the ice age to the age of technocracy? In the end, *After ALife Ahead* depends on the visitor to provide a sense of purpose.

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[146] Whitehead 1948, p. 64.

[147] Krauss 2009, p. 142.

[148] Analoguously, this wordplay translates to "City forestation instead of city administration". See Thönges-Stringaris n.d.

In addition, this is what distinguishes *After ALife Ahead* from works of the Environmental art movement: it is a work of contemporary art. Giorgio Agamben evaluates the question *What is the Contemporary?* in his eponymous essay:

> This means that the contemporary is […] the one who, dividing and interpolating time, is capable of transforming it and putting it in relation with other times. He is able to read history in unforeseen ways…[149]

This means that in a truly recursive fashion, time and space are not simply mutually dependent on each other nor constitutive of one another, but affiliate a connection with the visitor on many different levels. Like in the film *Arrival*, the contemporary apprehends a non-linear conception of time that evolves with them in unforeseeable directions due to its living disposition. This, in turn, can help us to conceive our actions toward Earth more holistically and thus make us treat her more ethically.

2.4. Life

In *The Order of Things*, Michel Foucault draws a genealogy of biology and concludes that the formation of the life sciences coincides with the invention of life itself, or: the abstraction of life from living beings.[150] Since the 18th century, there have been several attempts to define life. However, a truly all-encompassing description of the most fundamental concept for biology and philosophy alike has proven impossible; simply put, every definition relies on the binary logic of inclusion and exclusion. The Oxford dictionary provides the following definition of life:

> The condition that distinguishes animals and plants from inorganic matter, including the capacity for growth, reproduction, functional activity, and continual change preceding death.[151]

Canonical definitions of life usually rely on the possibility of reproduction, among others. But does this mean that living beings are automatically dead once they lose their ability to reproduce, for example, due to aging or disease? Biochemist Daniel E. Koshland Jr. notes that even if a representative of a species is alive and well, without a suitable partner for mating, the individual might as well be dead.[152] A famous example was Lonesome George, a male Pinta Island tortoise, who died in

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[149] Agamben 2009, p. 53.

[150] Foucault 2005, p. 139.

[151] Life, in: Oxford Dictionaries, URL: https://en.oxforddictionaries.com/definition/life (8.4.2019).

[152] Koshland Jr. 2002, p. 2215.

2012, thus putting an end to his whole species.[153] Such ideas probably inspired the work *Sterile* from 2014 by artist duo Revital Cohen and Tuur van Balen: there, a unique series of 45 albino goldfish lacking reproductive organs had been bred in collaboration with scientists. The fish were injected morpholinos, a molecular tool that suppresses the development of reproductive organs.[154] The exhibition consisted of the juxtaposition of an aquarium including some of the fish and the machine that produces "sterile goldfish from previously extracted eggs and sperm".[155] *Sterile* is an example of an artwork operating on ethical limbo: although the work gives rise to a set of questions, for example, if technical evolution is any different from natural evolution, the bleak presentation of the fish who underwent forced sterilization seems unethical. Moreover, sterilization is a major concern in the aquaculture industry: once the fish reach puberty, a lot of energy is needed to develop reproductive organs—for the industry, this equals a waste of resources and thus a loss of profit.[156] In this light, *Sterile* is a bio-political work scrutinizing the equity of cultured life. However, since there have been no demonstrations by anti-cruelty organizations surrounding the exhibition, we are led to believe that bio-political interventions of breeding animals are fine as they are a means to an end: meeting demand for the ever-expanding fish industry or, considering *Sterile*, as a work of art. This, in turn, suggests the assumption that there is in fact *still* a hierarchy of living beings.

The difficulty of defining life

Another problem with rigid definitions of life is that they simply do not cover all biological phenomena that are considered living. The most drastic definitions from the 1950s considered viruses as non-living since they do not show metabolic activity and "were considered as molecular (not cellular) entities".[157] This also suggests another assumption about the use of viral outbreaks in zombie films,

[153] See Nicholls 2006.

[154] Beetz 2015, n.p.

[155] Scrimgeour 2015, p. 369.

[156] Kjensli 2012, n.p.

[157] Patrick Forterre 2010, p. 156.

where an infection with the parasite-like entity often transforms humans into the living dead.[158]

Another problem with these definitions is the limited applicability to Earth—but what if there are forms of life that are not carbon-based? Several works of science fiction have speculated on the appearance and constitution of extraterrestrial life. Stanley Kubrick's seminal film *2001: A Space Odyssey* from 1968 is one of the first works to take distance from depictions of green-skinned, wide-eyed Martians. In the opening scene, a tribe of apes stumbles upon a shiny black monolith.[159] Thrilled and excited about the unknown phenomenon, they gather around the monolith to examine it. A cross-fade to the next scene suggests that this thinking process led the apes to reach another stage in their (cultural) evolution: the next day, they find and utilize bones as a weapon to defend themselves against other tribes. During the course of the film, it does not become clear where the monolith came from or what it is made of. However, it is quite likely that it was either fabricated by an extraterrestrial intelligence or even is part of another species *itself*. In any case, the sudden appearance of the monolith is akin to eschatological theories of the arrival of a deity delivering knowledge to the inhabitants. In Dennis Villeneuve's film *Arrival* (2016), this imagery is revisited when huge black monoliths land evenly spread on Earth. Through the work of linguist Louise Banks, the burning question surrounding the aliens' purpose of visiting the planet can be deciphered: their language, which is translated by the protagonist, operates synchronously in the past, present, and future. Through her meticulous studies, Banks experiences déja-vus and ultimately obtains the possibility of altering the future akin to singular-world time traveling-powers.[160]

In both films, the black monolith can be interpreted as an inevitable episteme;[161] it acts as a transformative impulse for a society. Its aesthetic implications can be subsumed under the notion of the sublime, meaning something physically and figuratively greater than the spectator, who is struck with awe upon

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[158] This is the case in movies like *12 Monkeys* (1995), *28 Days Later* (2002), *I am Legend* (2007) and the series *The Walking Dead* (since 2010).

[159] The scene is also available on YouTube, URL: https://www.youtube.com/watch?v=ypEaGQb6dJk (8.4.2019).

[160] Please refer to chapter 2.3 for a more in-depth analysis of *Arrival*.

[161] See Foucault 1970, p. xxii.

encounter. A similar shape, albeit smaller than the ones in *2001* or *Arrival*, is also present in *After ALife Ahead*: the aquarium placed in the middle of the space resembles a cuboid monolith—at least when its glass is switched to pitch black. [Fig. 16] The periodical shifting between transparent and black is deeply embedded in the recursive system of the work: the rhythm is determined by the Conus textile shell pattern inside the aquarium, while it directly controls the opening and closing of the roof hatch above. Building upon the monolith as a symbol for epistemological rupture, in *After ALife Ahead*, the dichotomous continuity of the aquarium signifies the recursive interchange between inside and outside. This suggests a powerful shift in thinking through relational or recursive structures that can also be found in attempts to define life.

Attempts to determine life

When Charles Darwin published *On the Origin of Species* in 1859, he created a new concept that would soon become elementary to the life sciences, the concept of natural selection:

> As many more individuals of each species are born than can possibly survive; and as, consequently, there is a frequently recurring struggle for existence, it follows that any being, if it varies however slightly in any manner profitable to itself, under the complex and sometimes varying conditions of life, will have a better chance of surviving, and thus be naturally selected. From the strong principle of inheritance, any selected variety will tend to propagate its new and modified form.[162]

While Darwin's observations on evolution and inheritance were truly groundbreaking, his definition of life certainly was not. He states that natural selection is the only way to move on from the "struggle of existence". Thus, natural selection is defined as some mysterious force of life that asserts itself again and again. In his essay *Speculative Evolution - Darwin, Freud, and the Whale*, Davide Tarizzo follows in the footsteps of Foucault and presumes that it was Darwin who postulated a new ontology of life by abstracting life from living beings.[163] This also coincides with the emergence of biology as a separate field of study. However, by defining life through natural selection, Darwin deployed a tautology:

> In the end, what is a living being? The answer, from Darwin's standpoint, reads as follows: everything which obeys the laws of Life is a living being. And since for him the laws of Life are summed up by a single law—the law

[162] Darwin 1859, p. 5.

[163] Tarizzo 2012, p. 73.

> of natural selection—one can logically conclude that everything which evolves over time "by means of natural selection" is a living being, or is "alive". As a result, following the track of Darwin's argument, natural selection ends up spelling out the law and the meaning of Life as such, of Life detached from any particular living being. Life as such, in turn, reveals the true meaning of being alive.[164]

Unfortunately, theories of evolution and natural selection do not disclose any fundamental information on the quality or the meaning of life. Instead, this way of thinking seems to be a derivative of the Western ideology of Enlightenment and its mission of casting light on metaphysical problems using a mechanistic methodology. In the end, the definition of life itself is nothing but a decision between living and non-living creatures. However, ethical handling is a direct consequence of this bifurcation: living beings are treated differently from non-living beings, and *higher* living beings like cats are again treated differently from *lesser* living beings like spiders. In *After ALife Ahead*, the chimera peacocks were taken out of the eco-system because they appeared to be depressed inside the unlively environment.[165] However, the mining bees could stay. Also, no attempts to free the HeLa cells were made, although technically, cells are alive. The twilight zone of this demarcation shows how problematic the differentiation between living and non-living entities is. Further, it highlights the responsibility humans need to undertake to ensure peaceful coexistence across different species.

To tackle the problem of division, Humberto Maturana and Francisco Varela created the concept of *autopoiesis* in 1980:

> An autopoietic machine is a machine organized (defined as a unity) as a network of processes of production (transformation and destruction) of components that produces the components which: (i) through their interactions and transformations continuously regenerate and realize the network of processes (relations) that produced them; and (ii) constitute it (the machine) as a concrete unity in the space in which they (the components) exist by specifying the topological domain of its realization as such a network.[166]

The systems-biological approach contextualizes the notion of living and retains the possibility of traditionally non-living things turning into living beings through participation in a system. Additionally, the authors emphasize the relations between entities in a system rather than objectifying the elements as secluded. However,

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[164] Tarizzo 2012, p. 73.

[165] Kock 2017, n.p.

[166] Maturana, Varela 1980, p. 78-79.

although Maturana and Varela's approach is certainly more holistic and inclusive than Darwin's, their main examples of autopoietic systems remain on a cellular level.[167] Here, the infamous Gaia hypothesis developed by James Lovelock and Lynn Margulis serves as an example of a truly holistic scientific theory: developed in the 1970s *before* Maturana and Varela's theory of autopoiesis, Gaia is defined as "a complex entity involving the Earth's biosphere, atmosphere, oceans, and soil; the totality constituting a feedback or cybernetic system which seeks an optimal physical and chemical environment for life on this planet."[168] By relating living and non-living as well as organic and inorganic agents in the recursive system of Gaia, Lovelock and Margulis take on the view that everything on the planet is interconnected and depending on each other—and got nothing but scorn and derision from the scientific community for uttering these thoughts. Even if their motivation was rooted more in environmental politics than in science, Lovelock and Margulis delivered an unprecedented demonstration in connecting these two fields that was widely received in ecology and systems theory.

Eventually, Maturana and Varela also expanded their theory of autopoiesis as demonstrated in their follow-up publication *The Tree of Knowledge*: "… their only product is themselves with no separation between producer and product. The being and doing of an autopoietic unity are inseparable … "[169] Here, a living system is defined as a recursive structure like Rosalind Krauss' concept of the post-medium condition, which states that a medium consists of a historically defined discourse rather than ontological truths. For Krauss, "this recursive structure is something made, rather than given".[170] Likewise to the notion of autopoiesis, it can be situated in theories of emergence rather than of design. Additionally, the loss of difference between producer and product is analogous to Bourriaud's theory of relational art. In *Relational Aesthetics*, he writes that the border between the artist and the viewer diminishes as the production of meaning in a relational artwork depends largely on participation: „[Similarly,] meaning and sense are the outcome of an interaction

[167] Maturana, Varela 1980, p. 90.

[168] Lovelock 2000, p. 10.

[169] Maturana, Varela 1987 p.48-49.

[170] Krauss 2002, p.7.

between artist and beholder, and not an authoritarian fact."[171] Therefore, in relational art, the viewer *evolves* into the participant.[172]

All these theories based on recursive structures imply that the difference between two alleged oppositional entities is not impossible to overcome. Indeed, it is feasible to subsume the notions of living and non-living by introducing a force that underlies both. Apparently, Darwin was not the first to abstract life from living beings: as early as 1677, Baruch Spinoza postulated in his work *Ethics*: "Everything, in so far as it is in itself, endeavours to persist in its own being."[173] Here, existence itself becomes a force of life that strives to persist. This form of endeavor is also called *conatus*.[174] For Spinoza, all beings were made from one substance, thus opposing the mind-body-dualism as propagated by Descartes. However, Spinoza was no materialist, but instead vindicated a point of view that the primary substance was God himself.[175] When taking this assumption to the extreme, there is no hierarchy anymore between, for example, humans, seaweed, and chickens. Instead, according to Spinoza, God can be found everywhere in the universe, equipping even the tiniest, most insignificant thing with a conatus. Although the return to a divine force seems outdated in times of secularization, the leveling of living and non-living beings is at the forefront of Spinoza's thinking.

The beginning of the 20th century marks the last time theories of a driving life force were fiercely discussed. The publication *Creative Evolution* by philosopher Henri Bergson proposes an "élan vital" or vital impetus as "life that, from its origin, [it] is the continuation of one and the same impetus, divided into divergent lines of evolution."[176] Evidently, the *élan vital* is supposed to be a primary force connecting entities by privileging alterity over identity. Since such a force cannot be validated with logic or by reproducibility, many philosophers and biologists alike dismissed

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[171] Bourriaud 2002, p. 80.

[172] Claire Bishop notes that the emphasis on the collective and the public space in relational art reverses the ideals of Greenbergian-Formalist Modernism that propagated autonomy and a one-to-one relation between the viewer and the artwork. Bishop 2004, p. 54.

[173] Spinoza, Curley 1994, p. 159.

[174] Conatus is derived from the Latin original "Unaquæque res, quantum in se est, in suo esse perseverare conatur" and translates to "to strive".

[175] Spinoza, Curley 1994, p. 198.

[176] Bergson 1911, p. 54.

vitalism as a logical dead end, a belief or ideology. It is interesting that although Darwin's definition of life is not sustainable either, it prevailed over vitalist theories. Still, Bergson's emphasis on difference probably led to him becoming an important influence for GIlles Deleuze. In *Bergsonism*, Deleuze attends to the élan vital:

> What does Bergson mean when he talks about élan vital? It is always a case of a virtuality in the process of being actualized, a simplicity in the process of differentiating, a totality in the process of diving up: Proceeding by 'by dissociation and division,' by 'dichotomy,' is the essence of life. […] It is as if Life were merged into the very movement of differentiation, in ramified series.[177]

If life, respectively élan vital, is based on difference, why should we differentiate between living and non-living entities at all? The possibility of a political de-hierarchization between life and matter is subject to Jane Bennett's research. Beginning with an attempt to discuss the increasing problem of littering, Bennett attributes "thing-power" or "the strange ability of ordinary, man-made items to exceed their status as objects and to manifest traces of independence or aliveness, constituting the outside of our own experience."[178] Although garbage might stop existing for someone after throwing it away, it is still occupying space (for example, in the Great Pacific Garbage Patch)[179] and still interacting with its immediate environment through decay. Bennett's goal is to establish a political ecology that appreciates things as equally entitled to people:

> A lot happens to the concept of agency once nonhuman things are figured less as social constructions and more as actors, and once humans themselves are assessed not as autonoms but as vital materialities.[180]

Following Bennett's argument, a political ecology of vitality seems to be the only way to overcome the binary opposition of living and non-living. However, it should be clear that vitality does not refer to a mythologized or fetishized force of life that cannot be recreated artificially,[181] but instead, similarily to the Spinozian conatus, can be found in anything if only we expand our understandings of life by acknowledging agency to non-living beings and things. In this way, *After ALife*

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[177] Deleuze 1997, p. 94.

[178] Bennett 2010, p. xvi.

[179] Evers 2014, n.p.

[180] Bennett 2010, p. 21.

[181] This is the most common criticism toward Bergsonian ideas as uttered by materialist scholars of philosophy. See also Bennett 2010, p. 63-65.

Ahead, as an interdependent eco-system of heterogenous agents, stimulates a political consideration of hybrid coexistence in a complex system.

2.5. Ecology

The "technical support"[182] of *After ALife Ahead* as well as other works by Pierre Huyghe is the eco-system, which is characterized by interdependent relations between a variety of agents. However, it is a very special kind of eco-system: the combination of biological events—animals, plants, and soil, among others—and technological events—an augmented reality application, algorithms, and data monitoring—sums up to the work's description as "time-based bio-technical system."[183] In contrast to *Untilled* from 2012, which included psychoactive plants, a Podenco Ibicenco dog, and the replica of a modernist sculpture, Pierre Huyghe added technological agents and processes in *After ALife Ahead*, thus including non-biological elements and creating a kind of cyborg eco-system. In this chapter, I discuss the implications of this consequential decision and how it leads to a re-assessment of the notions of nature and culture as well as their connection to cybernetic organisms.

The nature-culture divide

The term *ecology* was coined by zoologist Ernst Haeckel, in his publication *Generelle Morphologie der Organismen* in 1866. His book was also responsible for the spreading of Darwin's theories in the German-speaking world:

> Unter Oecologie verstehen wir die gesammte Wissenschaft von den Beziehungen des Organismus zur umgebenden Aussenwelt, wohin wir im weiteren Sinne alle „Existenz-Bedingungen" rechnen können. Diese sind theils organischer, theils anorganischer Natur […].[184]

Interestingly, Haeckel's definition not only emphasized the relational constitution of ecology but already acknowledged the inclusion of inorganic events. In contrast, prevalent understandings of ecology revolve around nature, the environment, and all the things non-man made that are worthy of protection. The counterpart of nature is

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[182] Krauss 2009, p. 142.

[183] Torke 2017, p. 210.

[184] "By ecology we understand the whole science of the relations of an organism to its surrounding external world, to which we can count, in a broader sense, all "conditions of existence". These are partly organic and partly inorganic." Translation by the author. See Haeckel 1866, p. 286.

culture, or everything made or directly influenced by humans. But are humans more natural or more cultural? What about bred or domesticated animals? And what about ruins, like some of the temples of Angkor that have been reclaimed by the surrounding jungle, do they form a *natural* habitat? Such borderline cases imply that a clear distinction between nature and culture is simply not feasible. This is also why Timothy Morton employs the form of the Möbius strip, a non-orientable surface, to explain the constitution of ecology:

> When you trace your finger along a Möbius strip, you find yourself weirdly flipping around to another side—which turns out to be the same side. The moment when that happens cannot be detected. The twist is everywhere along the strip.[185]

Morton argues that the dichotomy of nature and culture is an artificial cultural construct in the first place. In the same way, the meaning of nature or culture is subject to change once our perceptions of them alter. Distinguishing between them is more of a convention than mere fact. In geology, the debate on humanity's intervention in nature has already come to an end: humans have left an irrevocable footprint on Earth at least since the beginning of agriculture approximately 8,000 years ago through a process known as "niche construction".[186] By sowing, reaping, and later fertilizing the grounds in order to grow more reliable sources of food, early human settlers intervened in eco-systems in a way that renders the question over nature or culture obsolete. Additionally, niche construction is another type of a recursive structure: once humans found a way to improve their condition in the environment and changed it to suit their needs, the environment adapts to these alterations, resulting in an endless loop of reciprocal interferences.

Kate Soper suggests that the cultural conception of nature can be traced back to the 18th century.[187] From a linear historical perspective, Romanticism is often understood as a direct response to the period of Enlightenment, which is mostly depicted as a period of progress, scientificity, and humanism.[188] It also marks the beginning of the era of industrialization. Thus, so the narrative continues, a

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[185] Morton 2016, p. 108-109.

[186] Ellis 2018, p. 84.

[187] Soper 2004, p. 29.

[188] James Watts' invention of the steam engine in 1776, which marks the beginning of the Anthropocene according to Crutzen and Stoermer, also occurred during the period now referred to as Enlightenment. Crutzen, Stoermer 2000, p. 17-18.

tendency developed to focus on all things threatened by accelerating Modernism, and only by immersing oneself in nature one could find the way back to humanity. However, Morton notes that there has been a second invention over the course of the Romantic period: the notion of aesthetics, which further played a part in contributing to the subject-object-binary.[189] This is the downside of opposing nature to culture: through the process of abstraction, nature becomes objectified at the price of losing agency. As a promising resource for capitalism, nature becomes countable, allocable, and eventually somebody's property—akin to the dangers of non-living beings. If we were to hold onto the dichotomy of art and nature, the hyperpolitization of nature as a seemingly endless resource for exploitation puts all the more pressure on the arts to politically engage with this predicament.

Therefore, T. J. Demos urges to decolonize nature. We need a political ecology deconstructing the binary opposition of the social and the natural environment in order to end the power relations forming this dichotomy as well as the violence used for retaining their status.[190] As the bifurcation of nature is a Western phenomenon, Demos' deduces that colonialism spread these conceptions. Effectively, in most indigenous cosmologies, a distinction similar to the binary opposition of nature and culture does not exist. Therefore, Demos reminds us to always keep in mind that contemporary Western academic fields like post-humanism are merely appropriating age-old indigenous knowledge when writing about non-human agency or a holistic *Weltanschauung*.[191]

Moreover, the colonial history of the idea of an untouched nature was further investigated by William M. Denevan in his essay *The Pristine Myth*. He argues that the imagination of the Americas as a natural paradise lacking any human interference was in fact created by Christopher Columbus, who failed to recognize that the landscape had been altered by Native Americans just like any other place on Earth.[192] Moreover, Denevan concludes that through the massive decimation of indigenous populations at the hands of the colonizers, the American landscape

[189] Morton 2007, p. 22.

[190] Demos 2016, p. 203.

[191] Demos 2016, p. 23.

[192] Denevan 1992, p. 369-370.

might have become closer to the pristine myth by 1750 than by 1492.[193] In this sense, the understanding of nature as some untouched and primal force is always rooted in primitivism and plays a part in contributing to the othering of indigenous peoples. However, the fixation on the *naturalness of nature* can also be expressed the other way around, for example, in the debate on GMO crops. While it is by all means necessary to criticize mega-corporations like Monsanto for their profiting from the exploitation of the environment and people alike, demands for *undisturbed* crops are redundant considering that there is no such thing on Earth—nothing that has not been influenced directly or indirectly by humans. Moreover, Donna Haraway concludes on this issue:

> I cannot help but hear in the biotechnology debates the unintended tones of fear of the alien and suspicion of the mixed. In the appeal to intrinsic natures, I hear mystification of kind and purity akin to the doctrines of white racial hegemony and U.S. national integrity and purpose.[194]

Instead, we should acknowledge the entanglement of humans and the environment since this is the only way to mount a serious discourse on hybridity. Anicka Yi's work *The Flavor Genome* from 2016, a film about the versatility of flavor, engages in the apparent binary opposition of nature and culture. Visually, the movie juxtaposes scenes from molecular-biological laboratories and an expedition to the Amazon. The artist undertakes a search for a flower whose qualities lets humans experience what it is like to belong to another species. Yi actually addresses the possibility of a horizontalization of human and non-human events—even though in the end of the film, the search for the flavor genome is only advanced to boost consumption in the West. In an interview, the artist states: "The concept of nonhuman persons is found in the indigenous Achuar people in the Amazon, who believe that all life is a person, whether a plant person, an animal person, or a human person."[195] *The Flavor Genome* might serve as an example of inclusion of indigenous knowledge in post-anthropocentric critique. Additionally, the recent developments of nation-states acknowledging rivers the status of a legal person, thus granting them the same rights as humans, can be interpreted as one of the first steps into the direction of

[193] Denevan 1992, p. 381.

[194] Haraway 1997, p. 61.

[195] Simonini 2017, n.p.

establishing a de-hierarchization of human and non-human beings.[196] Of course, the fact that such an accomplishment is only possible via the detour of the Western legal system remains to be criticized.[197]

In her essay *The Companion Species Manifesto*, Donna Haraway refuses the binary opposition of nature and culture by advocating for complexity, using the term *natureculture*: "In layers of history, layers of biology, layers of natureculture, complexity is the name of our game."[198] The approval of complexity requires the denial of objectification as a means of abstraction of contradictions and the significant reductions involved. Similarly, in her seminal article *A Cyborg Manifesto*, Haraway has spoken out for the cyborg as a figure living with contradictions—namely the differences between humans and machine, but also between humans and animals.[199] So how could a breakdown of these contradictions look like? *After ALife Ahead* takes on the role of an eco-system moving beyond the limits of the natural by creating a complex system interdependent of both biology and technology, thus signifying not an overcoming of this binary opposition, but an intertwinement of it. Through the acknowledgment of complexity, we are forced to put an end to dialectical thinking, thus privileging not the apparent differences between nature and art—and thus driving them apart—but instead highlighting the many ways in which they are intrinsically connected, up until the point where one cannot be thought of without the other. Following the theories on recursive structures, art and nature mutually depend on one another because they *cause* one another. Here, art has the benefit of being a cultural practice surrounding beings of all kind as well as the possibility of confronting them with theories and reflections they might otherwise not get in touch with. In *After ALife Ahead*, this confrontational moment is made up of a complex system whose inner relations keep it together as if forming a new kind of evolution based on the fusion of biology and technology or nature and culture. Nevertheless, I need to stress that more than often, engaging with the arts is still a privilege and thus perhaps not the most democratic way of gathering new information. Additionally, consuming art is certainly not enough to stop climate change—in any case, political engagement on any scale is required

[196] O'Donnell, Talbot-Jones 2018, n.p.

[197] For further implications on the topic of rivers-turned-persons, please see chapter 2.7.

[198] Haraway 2016a, p. 94.

[199] Haraway 2016b, p. 10.

urgently; otherwise, it is a shame to feed upon new theory and knowledge but not act accordingly.

Simulated ecologies

Another manifestation of such a form of evolution is indicated in the action-adventure video game *Horizon: Zero Dawn* developed by *Guerilla Games* in 2017. Set in a post-apocalyptic version of Earth ruled by gigantic mechanical dinosaurs in the 31st century, humans seem to have regressed to a stone-age, hunters-and-gatherers-type of society. They are lacking any form of high-technology and any knowledge of their ancestors' history. Additionally, there seems to be no sign of a *naturally* or independently evolved life on earth except for humans. The player takes on the role of Aloy, an outlawed tribeswoman in possession of an augmented reality headset called *Focus* which helps her to navigate and lets her reconnect with the *Old Ones*. Throughout the game, the player learns that Earth has been destroyed due to a glitch in war robots feeding on biomass in the 21st century that slowly devoured the whole eco-system of the planet. As a last resort, the *Old Ones* have decided to create an artificial intelligence system, *Gaia*,[200] that was supposed to defeat the deviant robots and terraform[201] the earth. Afterward, life on Earth was restored from cryo-preserved embryos in order to give humanity another chance. The launch of *Gaia* led to a unique blending of biological and technological components through evolution that is also analogous to *After ALife Ahead*. [Fig. 17] Additionally, *Horizon* is a rare case of science fiction games concerned about diverse and especially accurate representation in terms of sex and race. Since ecology is based on diversity and difference, this should come as no surprise. Far too often, narratives set in a fantasy or science fiction universe are whitewashed as well as heavily focused on male heroes. This is often justified by referencing to the background of the lores and myths these stories are based on—J. R. R. Tolkien's *The Lord of the Rings*, for example, draws heavily on Celtic and Norse mythology, resulting in an alleged lack of suitable roles for people of color. Likewise, in seminal works of science fiction, for example, the *Star Wars* series, a variety of fictional alien races are introduced while people (and especially women and non-binary people) of

[200] *Gaia* may not only refer to the Ancient Greek personification of Earth also known as the primordial mother, but also to Lovelock and Margulis' holistic ecology theory as described in chapter 2.4.

[201] Terraforming denotes a hypothetical process of tweaking another planet in order to make it habitable for humans.

color only appear rarely. All the more satisfying, *Horizon* not only displays diverse characters, but also provides a valid reason for doing so: in order to maximize the chances of survival of the cryo-preserved embryos, as many different mutations of DNA as possible should be conserved.[202] Given that the revived humans have only lived for a couple of centuries, distinct phenotypical features are retained in the game. Therefore, *Horizon: Zero Dawn* is among the few titles of science fiction games where racial diversity is not merely added in retrospect, but an intrinsic part of the narrative—just like the fusion of biology and technology. In retrospect, an inevitable amalgamation of nature and culture as portrayed throughout the game is just an advance of evolution itself.

However, artificial ecologies are not only subject to science fiction: in his essay *Biosphère II*, Jean Baudrillard examines the eponymous megalomaniac experiment built from 1987 to 1991 in the Arizonian desert just 30 miles north of Tucson. Financed by millionaire Ed Bass, *Biosphere 2* displayed an attempt to preserve an artificial eco-system cut off from the atmosphere of Earth. *Biosphere 2* houses seven different areas including a rainforest, a savannah, an ocean, and a mangrove forest.[203] In the long term, scientists wanted to test an enclosed earth-like eco-system for experiments on space colonization.[204] The largest mission consisted of eight people called (also known as *Biospherians*) living autarkic in the building for two years.[205] However, the mission ultimately failed after encountering numerous problems including an inadequate supply of food, widespread deaths of the numerous animals and plants inhabiting *Biosphere 2* as well as psychological turbulences in the crew. Baudrillard identifies the project as hyperreal[206] and states in his essay:

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[202] Polo 2017, n.p.

[203] Marino, Odum 1999, p. 3.

[204] Allen, Nelson 1999, p. 16.

[205] Allen, Nelson 1999, p. 17.

[206] Baudrillard explains in an interview: “But what I would say is that between the real America and the hyperreal America, there is virtually no possible distinction, and that an example of that is the potential confusion between Biosphere II and the everyday life of America around it. The principle of simulation lies not in the idea that real is false but that the very distinction between false and true is impossible, that is, simulation.“ Smith 2002, p. 96-97.

> La vie réelle, qui a quand même bien le droit de disparaître (ou bien y aurait-il une limite paradoxale aux droits de l'homme?), y est sacrifiée à la survie artificielle.[207]

The layering of the artificial and the natural add up to a contradiction between *real* and *fake* viability—or preventable affliction. Indeed, the artificial struggle for survival could be straight out of a science fiction movie like Duncan Jones' *Moon* (2009): there, space engineer Sam Bell is on his way home to Earth from a three-year-long mission when suddenly his communication systems fail, leaving him no other companion than the artificial intelligence GERTY. In order to stay sane and avoid growing lonely, Bell decides to look around the space station. Eventually, he finds out that he is just one of a myriads of clones of one original astronaut of the same name endlessly assigned to the same position—supposedly, it is cheaper for his employer to fabricate clones than to hire and train new staff. With the help of two other versions of himself, Bell manages to return to Earth safely and is able to take action against his employer.

Spending two years in an enclosed eco-system could be an analogy to a mission in space. A possible reading of *Moon* takes into consideration the toll loneliness and being cut off from the world takes on people. However, in order to experience this feeling, we don't need to leave our planet behind: Derek Gladwin uses the term *solastalgia* to describe "a feeling of homesickness caused by environmental damage in the places people live, and particularly in the ways literature and visual culture have documented the ecological effects of the loss of place."[208] Considering the entanglement between humans and their environment as suggested through theories like niche construction, the loss of our planet might be directly connected to a loss of a part of our human identity as well. In fact, the ongoing struggles of indigenous peoples all over the world fighting for the restitution of their lands is a prominent example of solastalgia. Further, we can assume that the Biospherians underwent feelings of solastalgia as well. Of course, the real-world consequences of the failed missions at *Biosphere 2* did not result in an abandonment of the project, but, for now, in a discontinuation of the great hope of simulating Earth's biosphere. Nowadays, *Biosphere 2* is a public educational

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[207] "Real life still has the right to disappear (or would there be a paradoxical limit because of human rights?) but is sacrificed for the sake of artificial survival." Translation by the author. Baudrillard 1992, p. 129.

[208] Gladwin 2018, p. 5.

establishment operated by the University of Arizona—and from an ecological point of view, that's a positive outcome. Utopian ideas of colonizing space have been around for a long time, most notably in the work of architect and illustrator Rick Guidice from the 1970s.[209] Guidice's paintings show meticulously arranged suburban housing, cafés, and sports venues located on a giant Stanford torus in space. [Fig. 18] Although space colonization was introduced to discuss growing bio-political problems like overpopulation and ecological issues like environmental destruction, Guidice's scenes seem like a terrifying take on the American dream and evoke associations of large-scale livestock farming. Nevertheless, space colonization is still anticipated by some: in an interview, Amazon founder Jeff Bezos stated that his greatest achievement is not the online warehouse, but his own space program called Blue Origin: "I'm pursuing this work, because I believe if we don't we will eventually end up in a civilization of stasis, which I find very demoralizing."[210] Bezos gives the example of the efficiency of the human metabolism compared to the lavish of global energy expenditure, and concludes that shifting these problems into space is feasible because the "solar system can easily support a trillion humans."[211] In his logic of endless growth, expanding the total number of humans attains the possibility to increase the general production of energy. The dangers of such profit-oriented theories of space colonization is that they merely shift the problem of anthropocentrism to another planet: what happens once the population inside a Stanford torus gets too big? What is Bezo's master plan for moving to a new planet once Earth #2 is destructed due to massive energy resourcing? And how are people supposed to deal with the loss of Earth psychologically?

Combatting the ecological crisis

In *The Three Ecologies*, Félix Guattari cites the loss of human subjectivity as the main cause of the planet's ecological crisis. According to Guattari, other possible factors are the consumption of mass media, the ossification of home life (domestic conventions such as the nuclear family) as well as the waning of neighborly

[209] Scharmen 2017, p. 288.

[210] Döpfner 2018, n.p.

[211] Döpfner 2018, n.p.

relations.[212] He suggests ecosophical ethics for a re-evaluation of subjectivity to counteract for Earth's crisis:

> Here we are talking about a reconstruction of social and individual practices which I shall classify under three complementary headings, all of which come under the ethico-aesthetic aegis of an ecosophy: social ecology, mental ecology and environmental ecology.[213]

Social ecology encompasses the realm of social relations, while mental ecology could be described as the housekeeping of the psyche. Guattari chooses ecology as a consolidating field as "[i]t is not only species that are becoming extinct, but also words, phrases, and gestures of human solidarity".[214] Thinking ecologically requires to think relationally and transversally; a re-evaluation of subject-object relationships is mandatory. The most radical ecological theories abandon the subject-object-relationships entirely in favor of holism, culminating in an equalizing monism. Thus, thinking ecologically should not be confused with steering towards Green party politics, but rather refers to "putting the ideology of production for the sake of production back into question."[215] To Guattari, this involves moving beyond the human:

> This existential tension will proceed through the bias of human and even non-human temporalities such as the acceleration of the technological and data-processing revolutions, as prefigured in the phenomenal growth of a computer-aided subjectivity, which will lead to the opening up or, if you prefer, the unfolding [dépliage], of animal-, vegetable-, Cosmic-, and machinic-becomings.[216]

In the end, only an intersection of the three ecologies will ultimately help to get away from the ongoing threats posed by capitalism's unsustainable proceedings for profit. Theories like the *Great Acceleration* seem to support Guattari's stance that the rise of capitalism is directly responsible for the ecological crisis.[217] In his very last writing, *Chaosmosis*, Guattari invokes artistic practices—though he does not necessarily refer to institutionalized or established artists—as a helpful tool to enforce an ecological ethics:

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[212] Guattari 2000, p. 27.

[213] Guattari 2000, p. 41.

[214] Guattari 2000, p. 44.

[215] Guattari 1995, p. 122.

[216] Guattari 1995, p. 38.

[217] Please see chapter 2.2. for an introduction to the *Great Acceleration.*

> They [artistic practices] released social alterity through the union of filiation and alliance; they induced personal ontogenesis through the operation of peer groups and initiations, such that individuals found themselves enveloped by a number of transversal collective identities or, if one prefers, found themselves situated at the intersection of numerous vectors of partial subjectivation.[218]

According to Guattari, the personal aesthetic experience is a step in the direction of subjectivization—and not an institutionalized framework of what is good art and what is not. While he gives the negative example of the exhibition *Primitivism in 20th Century Art*[219] and its focus on formalism (that, to some extent, unintentionally highlighted the pointlessness of pure formalism), his demand could also be understood as a critique of the fetishization of media specificity and a plea for an art that favors participation and direct experience over plain visual information. Here, *After ALife Ahead* might come close to this definition: although there are formal references, for example, the use of ice floes reminiscent of Caspar David Friedrich's paintings, the work does not privilege appearance over experience. The eco-system, both artificial and natural, operates successfully because it is not a reproduction of an existing biosphere, but is subject to its own laws—in contrast to *Biosphere 2*, which is a mere simulation of Earth. Observing the proper functioning of a contingent and efficient system might evoke another possible interpretation: the inevitable, constant comparison to the real-world. How come *After ALife Ahead* is performing flawlessly without any human interference? And does this mean that there is no place for humans in the eco-system of the world? In his essay on *Biosphère II*, Baudrillard continues:

> L'hypothèse qui se profile dans le derniers écrits de Darwin, celle d'une espèce humaine sélectionnée en quelque sorte pour mettre fin à la sélection naturelle, à l'élimination naturelle des espèces (effet rèversif), réussissant ce coup de force de se survivre indéfinement, en assurant du même coup la survie des espèces existantes (tout en ayant largement

[218] Guattari 1995, p. 98.

[219] *Primivism in 20th Century Art* was an exhibition at the Museum of Modern Art in 1984 that juxtaposed works from Cubism and works that allegedly served as inspiration, for example, ritualistic masks. It was widely criticized for the stark contrast of display of Western and non-Western art—the former being referenced as masterpiece created by a gifted artist and the latter being presented as a-historic and anonymous. See McEvilley 1985.

> contribué à la disparition d'un grand nombre d'entre elles)—cette hypothèse est-elle vraisemblable?[220]

The idea that evolution created humans as a sort of self-testing device is deeply human; supposedly, only humans would attach any form of meaning to the force of life itself. Instead, evolution, or the Spinozian *conatus*, does not care what it produces, nor does it judge the outcomes—these are both human concepts. If vitality has an agenda at all, we can only suspect that it would rather be concerned with mutations and variations to ensure survival through alterity. This is also why Bezos' fear of a civilization of stasis is unsubstantiated: all beings on Earth are in constant change and are evolving all the time. There is no such thing as balance in an ecological system since the system—as an autopoietic unit or a recursive structure—transforms permanently. Insofar, *After ALife Ahead* is showing a possibility of a future eco-system growing from technical and biological parts, just like the science fiction setting of *Horizon: Zero Dawn*. In turn, we can hope that at some point, the word ecology does not refer to nature anymore, but instead to a sustainable dealing on the mental, social, and environmental realms, just like Guattari suggested. Then, the eco-system of *After ALife Ahead* can be understood as a science fiction scenario. Perhaps our understanding of humanity will expand so that technology will be acknowledged as a derivative of human evolution instead of a tool. In this case, *After ALife Ahead* visualizes of the vast possibilities of ecology and, if humans really make it into space one day, what the biosphere might look like without them.

2.6. Hybridity

The year 1816 gave birth to one of the most famous hybrids in fiction: the monster from *Frankenstein; or, The Modern Prometheus* by Mary Shelley. The novel marks the beginning of the science fiction genre and is still widely received today. The creation of an artificial living hybrid of human body parts fueled many horror fantasies, but, in its core, *Frankenstein* is a deeply ethical work. The lunatic, megalomaniac doctor Victor Frankenstein succeeds in his mission of assembling an artificial human but must find a way to deal with his creation in an ethical way.

[220] "The hypothesis looming in the last writings of Darwin is that of a human species selected to put an end to natural selection for the natural elimination of species (reversal effect), succeeding this trick of force to survive indefinitely, and at the same time ensuring the survival of existing species (while having largely contributed to the disappearance of a great number of them)—is this hypothesis likely?" Translation by the author. Baudrillard 1992, p. 130.

Instead of being a subservient masterpiece, Frankenstein's monster develops his own will and blames his creator for bringing him to life:

> Cursed, cursed creator! Why did I live? Why, in that instant, did I not extinguish the spark of existence which you had so wantonly bestowed? I know not; despair had not yet taken possession of me; my feelings were those of rage and revenge.[221]

In the end, the monster, left behind by its creator, suffers from loneliness and repudiation—not because of its otherness but due to being neglected. In his essay *Love Your Monsters*, Bruno Latour concludes: "Dr. Frankenstein's crime was not that he invented a creature through some combination of hubris and high technology, but rather that he *abandoned the creature to itself*."[222] While the doctor admittedly accomplished the impossible, he did not care about the aftermaths of his creation—we could also say that he produced under unsustainable conditions. Jon Turney argues that although the story is a poetic spine-chiller, it is also a narrative on science and how science is pursued—and even if the methodology changed over these past two centuries, the motives remain the same.[223] Mary Shelley presumably based Dr. Frankenstein's experiments on Luigi Galvani's experiments with electricity and frogs' legs. Therefore, we can derive that the then-new-found power of electricity is the arcane force that brings Frankenstein's monster to life.[224] Electricity also takes on an essential role in *After ALife Ahead* as it is responsible for the execution of processes like data monitoring, altering the architecture, and providing the aquarium with power. However, the motif of hybridity and its ethical handling are dealt with quite differently than in *Frankenstein*.

During the 20th and 21st century, artificial life is more commonly demonstrated in the figure of the cyborg or android, a humanoid robot designed to look as anthropomorphic as possible, often in order to trick humans into thinking

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[221] Shelley n. d., p. 99.

[222] Latour 2011, p. 41.

[223] Turney 1998, p. 35.

[224] In the 1931 film adaption by James Whale, the use of electricity is further highlighted by the ongoing thunderstorm (although this has been an addition by the film-maker). The scene can be watched on YouTube, URL: https://www.youtube.com/watch?v=1qNeGSJaQ9Q (7.8.2019).

they are of the same kind.[225] The movie *Ex Machina* (2014) by Alex Garland could be deemed a contemporary equivalent of *Frankenstein*: the film follows an employee of a Silicon Valley-type of tech-company who is chosen to test the magnum opus of his boss, a feminized android called Ava. She is a highly developed artificial intelligence incorporated in the body of an android but with a deceptively real human face. Over the course of the movie, Ava develops her own agenda and decides to break free—willingly using every kind of aid she can get, including manipulating the test subject into falling in love with her. In contrast to *Frankenstein*, Ava succeeds in killing her creator and breaks free.

However, while Shelley was still trying to describe the force of life, contemporary science fiction is more concerned with questions on consciousness and intelligence. In general, life is regarded as scientifically explainable by fulfilling certain characteristics.[226] Ironically, rationalist-reductionist definitions of *mechanical* life in contrast to consciousness further lead to a dualism akin to the Cartesian mind-body-problem.[227] Still, both Frankenstein's monster and Ava share common ground in their vital impetus, electricity.

Turney indicates that the hybridity of Frankenstein's monster is made up of the "opposition between the mechanistic [respectively the machine] and the organic".[228] Considering the unclear definitions of "mechanistic" and "organic", which allude to a dialectics of nature and culture, I would prefer to contemplate the monster as a precursor of cyborgs in the sense of Donna Haraway. She describes cyborgs as beings located in the twilight zone of contradictions trying to mediate between them. In *A Cyborg Manifesto*, Haraway states:

> By the late twentieth century, our time, a mythic time, we are all chimeras, theorized and fabricated hybrids of machine and organism; in short, we are cyborgs. The cyborg is our ontology; it gives us our politics. The cyborg is

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[225] Notable examples of tales focusing on the so-called *Turing test* that usually go hand-in-hand with self-awareness and deviant behaviour of androids include Isaac Asimov's *I, Robot* (1950), Philip K. Dick's *Do Androids Dream of Electric Sheep?* (1968) and its film adaption *Blade Runner* (1982) by Ridley Scott, Masamune Shirow's manga *Ghost in the Shell* (1989), Alex Garland's movie *Ex Machina* (2014) as well as the video games *Portal* (2007) and *Portal 2* (2011) by Valve and *Detroit: Become Human* (2018) by Quantic Dream.

[226] Koshland Jr. 2002, p. 2215.

[227] Now further dichotomized as "easy and hard problems of consciousness", a monism based on the materialization of consciousness in terms of qualia is still highly debated in the fields of cognitive science and neuroscience. Chalmers 2010, p. 4-5.

[228] Turney 1998, p. 39.

> a condensed image of both imagination and material reality, the two joined centers structuring any possibility of historical transformation.[229]

In fact, by accepting and embracing complexity instead of taking on a reductive logical disjunction or a constrained form of synthesis, we are prepared for novel issues concerning hybridity—a phenomenon thoroughly referenced in *After ALife Ahead*: in the following, I want to discuss two on-site hybrids, the chimera peacocks and the *GloFish*, to find out how they can mediate through the post-anthropocentric discourse before discussing the ethical dimensions of Huyghe's work.

Peacocks and *natural* mutations

The pair of chimera peacocks is probably the most myth-enshrouded feature of *After ALife Ahead*: hybrids of the common blue-green peacock and the rare albino peacock, the two birds were already removed from the ice rink a couple of days after inauguration—they were reported to be unhappy.[230] [Fig. 19] This is also the only unexpected alteration made to *After ALife Ahead*. Interestingly, their detachment fits their century-long significance in Christian iconography as a symbol of resurrection. The peacock is a symbol of immortality and is often present in illustrations of the type *Adoration of the Magi.*[231] For example, in the composition of Sandro Botticelli from 1475, we can see the peacock sitting in the top right corner, surveilling the scenery as a symbol of eternity. [Fig. 20] The superstition of the immortal birds probably stems from an Ancient myth that stated that their flesh would never rot.[232] Another explanation is the fact that peacocks shed their magnificent feathers every year during autumn and will only regain them in the spring. Furthermore, according to medieval bestiaries, the peacock would cry out loudly when realizing it has lost its feathering. This myth was used by clerics as a model for faithful Christians who should also be afraid of losing their good qualities

[229] Haraway 2016b, p. 7.

[230] Kock 2017, n.p.

[231] Butzkamm 2001, p. 165.

[232] Bumiller 2007, p. 92.

that God had given to them.[233] In non-Western cultures, the peacock has a similar iconography.[234]

Nowadays, peacocks are mostly associated with proverbs like “proud as a peacock“ or “vain as a peacock“ that simply refer to the *male* bird’s unusual plumage. Considering the peahen’s brownish feathering, such phrases are explicitly gendered in terms of the peacock attracting his female mate—an aspect easy to overlook and all the more important to make clear. However, the blue-green peacock only makes up half of the chimera, while the other half is pure white due to a genetic mutation known as albinism. The condition known as chimerism occurs when two fertilized eggs or zygotes merge and form one organism but with two different sets of DNA.[235] In any case, chimerism is a *natural* mutation provoked by chance also occurring to humans and resulting, for example, in having two blood types. Additionally, when a pregnant woman is expecting fraternal twins, it is possible that one of them dies early on and the remaining one takes over the other’s cells.[236] In this case, it is perfectly plausible to even have two sets of DNA. Again, all of these mutations occur naturally or, more precisely, they occur through the aid of non-human agency, and not inside a laboratory.

The motif of albinism can also be found in another work of Pierre Huyghe, *A Journey That Wasn’t* from 2006. In the film, Huyghe and his crew “set sail from Argentina to Antarctica on a scientific research vessel. […] He was also on the lookout for a rare, albino penguin, said to inhabit such areas.”[237] Over the course of the expedition, Huyghe actually found the mysterious white penguin hiding in plain sight in the ice. [Fig. 21] Mark Godfrey notes the intertwinement of fact and fiction in the film:

> The factual effects of global warming, he [Pierre Huyghe] indicated, encouraged him to invent a fictional hypothesis that went as follows: the retreat of the polar ice sheets should lead to the creation of new islands

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[233] Collins 1913, p. 33.

[234] In the Sassanid exegesis of Zoroastrianism, the peacock is associated with light and is a symbol of the Wise Lord Ahura Mazda; while in some Islamic lores, the peacock is a cosmic symbol and even appears in a creation myth. Even nowadays, the peacock is a central symbol in India as reflected in its role as the national animal. Reimbold 1983, p. 77-78.

[235] Andrieu 2007, p. 60.

[236] van Dijk, Boomsmo, de Man 1996, p. 264.

[237] Barikin 2012, p. 199.

> and to mutations in the Antarctic fauna; a journey to such islands should therefore result in a contact with a mutated species.[238]

Thus, the albino penguin can be understood as one of the newly emerging mutations due to irresponsible human behavior that led to the melting of the polar ice caps. Since global warming is a fact, what is fictional about *A Journey That Wasn't*? Although albino penguins appear in a variety of fiction, for example in the short story *At the Mountains of Madness* by H. P. Lovecraft,[239] they also exist in the real-world.[240] However, in *A Journey That Wasn't*, Huyghe did not really chase the legendary bird, but orchestrated a narrative of expedition. His exhibition at *Espace Louis Vuitton* in 2017 in Venice confirmed the suspicion that the penguin is more fiction than fact by displaying the animatronic cyborg puppet used for the film.[241] But even if the penguin itself is not even real or natural, his albinism is, like chimerism, a *natural* mutation arising by chance.[242] So although humans might not have had a direct impact on the penguin's emergence in the real-world, *A Journey That Wasn't* proposes the possibility of mutations arising due to Capitalocenic behavior. This is further reflected in the journey-form of the expedition that always contains an element of colonialism. Eventually, the film demonstrates a form of imaginary recursion: the penguin is brought into life through global warming that is caused by humans, thus making the bird's existence just as man-made, purposeful, and *unnatural* as its detection—leading to the assumption that the ecological crisis is, in fact, hybrid.

The chimera peacocks from *After ALife Ahead* could then be described as cyborgs because they combine contradictions in themselves: age-old symbolism of resurrection attributed by humans and a mutation caused by a caprice of nature. This makes the peacocks perform on the edge of artificiality even though they emerged without interference by humans. Centuries of cultural ascription pushed the image of chimeras toward the artificial and the synthetic. In *After ALife Ahead*, the peacocks act like guardians of immortality in an artificial afterlife, a bio-technological kingdom come, as they strut around and watch over the eco-system.

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[238] Godfrey 2008, p. 48.

[239] See Lovecraft 2018.

[240] BBC News UK 2002, n.p.

[241] Kufer 2017, n.p.

[242] Sørenson Vaage 2011, p. 98.

GloFish and genetic engineering

In general, art history is full of chimeras: sphinxes, gryphons, centaurs, anthropomorphic animal deities, and so on. Dorothy Nelkins and Suzanne Anker define chimeras as "a symbolic monster composed of incongruous parts."[243] They also note that aside from their connotation as mythological creatures, chimeras became increasingly popular in the Dadaist and Surrealist movements—especially the human-machine-hybrid, for example in the collage *Das Schöne Mädchen* from 1920 by Hannah Höch.[244] [Fig. 22] The authors point out that in the advent of bio-technical engineering a couple of decades later, the method of cutting out, assembling, and re-assembling essentially stayed the same and only shifted to a molecular level.[245] A product of genetic engineering, the *GloFish*, can also be found in the aquarium in *After ALife Ahead*, where it keeps company with the hermit crab living inside the Conus textile shell. [Fig. 23] The half-yellow and half-pink zebrafish is equipped with additional genetic material from a jellyfish that provides the possibility to glow in the dark. In this sense, the *GloFish* is also a chimera. However, it is not the first animal in contemporary art provided with the green fluorescent protein (GFP): in 2000, Eduardo Kac published a photograph of the art world's first fluorescent animal, the bunny *Alba*. Also known as *GFP bunny*, Alba stems from a series of rabbits genetically enhanced with GFP by the *Institut national de la recherche agronomique* (INRA).[246] The bunny also has the albino mutation, which is further reflected in its name that translates from Latin to *white.* Although Kac repeatedly assured that the animals suffered no harm from the change in genetic code and strongly emphasized that Alba is not just an experiment in hybridity, but "a complex social event",[247] no bunnies were ever exhibited, leading the general public to speculate that *Alba* was nothing more than a myth.[248] Until today, Kac claims that he was never able to take *Alba* from the laboratories of INRA but that the bunny definitely existed. If the GFP bunny has never seen the light of day outside the

[243] Anker, Nelkins 2004, p. 83.

[244] Anker, Nelkins 2004, p. 88.

[245] Anker, Nelkins 2004, p. 90.

[246] Sørensen Vaage 2011, p. 29.

[247] Kac 2000, n.p.

[248] Gessert 2010 , p. 119.

laboratory, how is *Alba* any different from the myriads of laboratory rats and animals used for testing? And, if there is little to no difference, how can the treatment of *Alba* or the *GloFish* be ethical?

Animal ethics

Donna Haraway discusses alterity, or the difference between humans and animals, and gives the example of the *OncoMouse*™, an animal prone to cancer and solely created for research. As Rosi Braidotti notes, the *OncoMouse*™ "is the technobody par excellence: it has been created for the purpose of profit-making trafficking between laboratories and the market place and thus navigates between patent offices and research benches."[249] Haraway tries to empathize and connect with the laboratory animal:

> OncoMouse™ is my sibling, and more properly, male or female, s/he is my sister. […] Whether I agree to her existence and use or not, s/he suffers, physically, repeatedly, and profoundly, that I and my sisters may live.[250]

In fact, although empathy lets people connect with other beings, the emotion is experienced individually. It is therefore up to everyone to empathize with the *OncoMouse*™ enduring testing, the chicken being roasted, or the cow providing milk. For example, Sarah Franklin, author of *Dolly Mixtures*, a book about the cloned sheep, highlights the sad reactions she received toward Dolly's death during her research process.[251] Of course, Dolly was a very special animal—an icon, even—but why is it easier to empathize with Dolly than with *OncoMouse*™?

In the movie *Okja* (2017) by Bong Joon-Ho, the *Mirando* corporation producing genetically modified food secretly creates a chimera species to supply the rising demand of meat consumption. Their *super-pig* is an oversized hybrid of swine, hippopotamus, and dog. For the sake of publicity, *Mirando* sends out the most beautiful piglets to farmers across the globe with the intention to let them develop in a natural habitat under human guidance. After ten years, the company collects the hybrids to choose a prime specimen suitable for cloning. However, when they come to South Korea to collect Okja, they were not prepared to encounter resistance with her keeper, a teenage girl named Mija. To her, Okja is

[249] Braidotti 2006, p. 202.

[250] Haraway 1997, p. 79.

[251] Franklin 2007, p. 160.

much more than a pet let alone a food resource. In a cat-and-mouse-game, Mija follows her pig to Seoul where she runs across a group of bio-terrorists planning to free Okja, and, after teaming up with them, they infiltrate the super-pig parade in New York City to finally break her free. In the end, they succeed in retrieving Okja just seconds before her transformation into a sausage snack—however, the slaughterhouse is already operating at full stretch, sealing the fate for thousands of other super-pigs.

In many ways, the film can be deemed post-anthropocentric: Okja's rescue depends on Mija's profound love that transgresses the boundaries between species. Additionally, the movie continuously portrays the girl Mija as hybrid, too: growing up in the mountains of Korea, she has to set for the metropolises of Seoul and New York, living between the land and the city. Her modest skills of the English language make her a cyborg of language. And when the *Mirando* corporation begs her to become the poster girl of their super-pig campaign, she is essentially becoming a hybrid of other peoples' agendas. Still, Mija's interests are stemming from empathy and love for Okja, and while the movie exaggerates the agency of a teenage girl, it also gives hope for acknowledging animals as autonomous beings.

In contrast, the *GloFish* embodies a very different kind of attitude toward animals: it is a strictly commercially available good, similar to the *OncoMouse*™. While *OncoMouse*™ was bred for the purpose of research, the fish is only used for the purpose of decoration. In this sense, *GloFish* can be contemplated as the aesthetic response to *OncoMouse*™. In the eyes of the law, even though there are strict prohibitions of animal cruelty, animals are considered as mere property.[252] Animal cruelty is considered a crime because it always includes a human who can be punished. For animals, this simply restates their lack of legal capacity and entitlement to any rights. Moreover, the fixed hierarchy for humans and animals is also reflected in a variety of moral conceptions that make it easier for a human to become animal instead of the other way around. In *The Posthuman*, Rosi Braidotti paints a dire picture of humanity's relationship toward animals: recalling George Orwell's novel *Animal Farm* and the famous statement "all animals are equal, but some are more equal than others",[253] Braidotti argues that in the era of the Anthropocene, the opposite is true:

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[252] Here, I am referring to the federal law of Austria. BGBl I 118/2004 idF. 04/2019, n.p.

[253] Orwell 2009, p. 185.

> [N]o animal is more equal than any other, because they are all equally inscribed in a market economy of planetary exchanges that commodifies them to a comparable degree and therefore makes them equally disposable.[254]

To be fair, comparing beings like *OncoMouse*™ and *GloFish* to a high-priced pedigree dog or a racehorse with a centuries-old family tree reveals a capital-founded hierarchy among animals, too. But, Braidotti's statement is still true for human-animal-alterity. Nevertheless, in *After ALife Ahead*, the *GloFish* is free from the burden of being pure ornament since there is no ultra-violet light installed in order to evoke its fluorescence. Even if there was, considering the constant switching of the aquarium's smart glass between transparent and pitch black, the *GloFish* is now in a safe environment, since spectators are not able to see the fish glow in the dark. Freed from the burden of representation, the *GloFish* plays out its hybridity by keeping it to itself. This suggests that the objective of its breeding is being negated, and instead of serving a merely ornamental purpose, the *GloFish* can exist autonomously from the gaze of the visitors.

But is this enough to consider Huyghe's treatment of animals as ethical? In contrast to famous examples of animal abuse in art like Joseph Beuys' *I Like America and America Likes Me* from 1974, where the artist spent a couple of days with a trained coyote inside a gallery space,[255] or Damien Hirst's *A Thousand Years* from 1990, which consisted of a vitrine where myriads of flies hatched just to be electrocuted and die,[256] Huyghe seems to care for species-appropriate husbandry. This is apparent in his choice of animals, which mainly included easy-to-keep fish, insects, and amphibians,[257] and his immediate reaction of withdrawing the chimera peacocks from *After ALife Ahead*. *Human*, the dog from *Untilled*, was equipped with a human caretaker especially hired for ensuring her safety.[258] Furthermore, Huyghe's artistic practice never included the killing of a living being for the sake of art. Still, considering Huyghe's interest in the agency of animals, it is questionable if simply not harming animals but nevertheless exploiting them for his own work is actually

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[254] Braidotti 2013, p. 71.

[255] Sutton 2017, p. 58.

[256] See Chaudhuri 2007.

[257] *Human*, the Podenco Ibicenco dog featured in *Untilled* (2012), had her own on-site guardian watching over her over the course of the exhibition.

[258] von Hantelmann 2018, p. 2.

praiseworthy. Although Huyghe collaborates frequently with artists, scientists, and technologists over his artworks, he does not seem to involve any NGOs or institutions educating on environmental issues.[259] Also, there are no records of any form of financial support toward such organizations. However, these are just as important aspects of ethical behavior as raising questions on hybridity. Therefore, it is crucial not to simply encourage contemplating entanglement, but to take action in any way possible. Otherwise, there is a risk for Pierre Huyghe's complex mental stimulations to stay imprisoned in the context of the art world and thus fail to enact change outside it—and, to speak frankly, this would be a big loss in terms of artistic facets of the environmental movement.

2.7. Bio-power

Since Michel Foucault coined the notions of bio-power and bio-politics, they have been useful to scrutinize how life and death are regulated by governmental or sovereign institutions. While discussing the sexual revolution of 1968, Foucault formulates the repressive hypothesis which states that—counterintuitively to the predominant reticent conduct toward sexuality—there have never been restraints on talking about desire, but instead a stark implementation of rules on how to talk about it:

> We have not only witnessed a visible explosion of unorthodox sexualities; but—and this is the important point—a deployment quite different from the law, even if it is locally dependent on procedures of prohibition, has ensured, through a network of interconnecting mechanisms, the proliferation of specific pleasures and the multiplication of disparate sexualities.[260]

Foucault demonstrates that forms of power controlling life stem from a multitude of cultural norms and disciplines in the Western world, for example, the Christian confession.[261] Over the course of the 18th century, the discourse on sexuality intensified through the formation of a *scientia sexualis*, the objectification and scientification of sexual orientation, reproduction, and passion. Thus, bio-power operates on the binary opposition of "licit and illicit […] and its mode of action with

[259] McDermott 2018, n.p.

[260] Foucault 1978, p. 49.

[261] Foucault 1978, p. 18.

regard to sex is of a juridico-discursive character."[262] In this chapter, I examine the laws and relations regulating life in *After ALife Ahead.*

Evolutions of bio-power

In the lectures Foucault held at the *Collège de France* from 1977 to 1978, he examines the development of bio-politics in early modern Europe. He gives the example of the irrevocable exclusion of lepers from society during the Middle Ages, which is in stark contrast to how outbreaks of smallpox were handled in the 18th century: instead of locking up the infected, numerous statistics of the progression of the disease as well as the efficiency of the relatively new method of inoculation were produced.[263] In general, Foucault observes a shift from symptomatic treatment to ongoing, prophylactic security measurements.

Since the 1970s, there have been many updates on the concept of bio-power, for example, in Giorgio Agamben's book *Homo Sacer*, that he begins with quoting the following passage from *The History of Sexuality*:

> For millennia, man remained what he was for Aristotle: a living animal with the additional capacity for a political existence; modern man is an animal whose politics places his existence as a living being in question.[264]

Agamben argues that in ancient Greece, there were two conceptions of life: *zoē*, "the simple fact of living common to all living beings", and *bios*, "the form or way of living proper to an individual or group"[265] that could also be deemed as social or political life. Agamben notes[266] that Foucault never turned toward the distinction of bios and zoē and argues that "the entry of zoē into the sphere of the polis—the politicization of bare life as such—constitutes the decisive event of modernity and signals a radical transformation of the political-philosophical categories of classical thought."[267] Agamben provides a punishment from Roman law as an example: as a

[262] Foucault 1978, p. 83.

[263] Foucault 2009, p. 9-10.

[264] Foucault 2009, p. 143.

[265] Agamben 1998, p. 1.

[266] Agamben reasons that Foucault's early passing might be the reason for his short outlining of bio-power.

[267] Agamben 1998, p. 4.

person “who may be killed and yet not sacrificed“,[268] the *homo sacer* has been stripped of his bios, but retains his zoē. To use Cartesian words, we could say that he turns from a subject into an object. Precisely the same happens with the emergence of bio-power: as stated above, the formation of biology as science requires the objectification of people. However, as the binary opposition of life and death is reflected in what Agamben calls bio-politics and “thanatopolitics“,[269] the field of biology is always operating on the fringe of life. This is evident in his discussion of eugenics and the concentration camps in Nazi-Germany:

> Insofar as its inhabitants were stripped of every political status and wholly reduced to bare life, the camp was also the most absolute biopolitical space ever to have been realized, in which power confronts nothing but pure life, without any mediation.[270]

The danger of biology becoming a totalitarian ideology that reduces people to a living pile of skin, bones, and flesh—or worse, soap and lamp shades—is exactly why we need strict ethical guidelines if we want all people to be equally entitled to bios.[271] Otherwise, a bio-politics that classifies people based on their genetic code might not be subject of science fiction movies any longer. In *The Island* (2005), Michael Bay addresses the economic value of cloned human bodies. There, people live in a life-island isolation complex. When one of them experiences strange dreams about incidences he never experienced, two of them escape just to find out that they are clones from wealthy people in the outside-world used for organ harvesting or surrogacy. In the end, they manage to free the other clones living on the island and take down the founding company. Although the process of cloning via fully grown human hosts seems unnecessary complicated, the movie leaves a sour taste considering the increasing viability of such a project in the real-world—and the worry that an uncovering might only happen by chance. If, as Agamben argues, people can easily be stripped off their bios, what does an ethical dealing with zoē or even non-living beings look like?

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[268] Agamben 1998, p. 8.

[269] Agamben 1998, p. 122.

[270] Agamben 1998, p. 171.

[271] In chapter 2.6., I discuss how an ethics based on empathy might be a solution to this problem.

The history of Henrietta Lacks and her cellular tissue

I want to discuss this question over the HeLa cells present in *After ALife Ahead*. HeLa cells are derived from human cervical cancer—but in fact, the cells were taken from African-American woman Henrietta Lacks shortly before her death in 1951 without her knowledge not to mention consent.[272] In fact, Lacks' family only learned about her legacy after a biologist published an open letter questioning the identity of the cells' donor—in research, they were simply referred to as HeLa cells.[273] Because of their strong probability of survival and their rapid rate of multiplication, they are often described as immortal. To be clear, the scientific value of this cell strain is inconceivable: they were the very first cells to continue to live outside of the human body, the first successfully cloned human cells, and constitute the basis for myriads of studies and experiments. Indeed, the first successful vaccination against polio was fabricated with the help of HeLa cells—therefore, it is an interesting coincidence that Foucault chose the smallpox outbreak as a case study for bio-power.[274] Nowadays, HeLa cells constitute a million-dollar-business for scientific research:

> One scientist estimates that if you could pole all HeLa cells ever grown onto a scale, they'd weigh more than 50 million metric tons—an inconceivable number, given that an individual cell weighs almost nothing.[275]

In the same vein, we can only speculate how much money has been made with the cells over the last decade.[276] However, the bio-political implications of the HeLa strain even go beyond the fact that a woman experiencing intersectional oppression in the 1950s was defrauded of her own body tissue: in a paper from 1991, biologist Leigh van Valen argues that HeLa cells should be regarded as a new species.[277] Ironically, their immortality is one of the primary reasons of van Valen's argument: since they have been taken out of Lacks' body, the cells have changed so much that they are simply not *human* anymore. Additionally, they can only live inside of petri

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[272] Landecker 2007, p. 172.

[273] Skloot 2010, p. 298.

[274] Considering that the Lacks family only learned about the origin of HeLa cells in the late 1970s, it is a mere coincidence that Foucault talks about the smallpox virus in regard to bio-politics in 1976.

[275] Skloot 2010, p. 14.

[276] For example, one vial of HeLa cells can be purchased on the internet at a starting price from $535, see URL: https://www.mybiosource.com/cell-line/hela-gfp/168642 (.8.2019).

[277] van Valen, Maiorana 1991, p. 71.

dishes and nutrient solution; in return, they proliferate so vigorously that he calls them "the weeds of cell culture."[278] In conclusion, van Valen argues that since HeLa cells have been alive outside of a human body for such a long time, they are subject to a whole new form of evolution. This is true considering their natural selection is dictated by the laws of demand and supply of the market of biological research material.

In *After ALife Ahead*, the living conditions inside the incubator are determined by an algorithm drawing on the data monitored in the eco-system, including infrared sensors tracking the movement of the bees and recordings of temperature, carbon dioxide, and rain. The more is going on in *After ALife Ahead*, the more the cells multiply inside the incubator—therefore, we might suggest that they feed on masses of data; in the end, cancer cells behave similarly to parasites.[279] The cells are also connected to the augmented reality application: when they reach a certain threshold, more inverted black pyramids appear in the virtual world. [see Fig. 7] Pierre Huyghe refers to this process as "metastasis"[280]—we can also think of this process as a symbolization of cancer growth. Apart from that, the metastasis might also visualize the unstoppable life force emanating from Henrietta Lacks' cells, like a representation of the Spinozian conatus, the striving for life, itself. Since the cell line is immortal, all the data plugged into its prosperity pursues the goal of eternal living—or, as the work's title suggests, an afterlife to all the non-human beings traditionally being denied such a thing. So, what does this mean for the memory of Henrietta Lacks? At first glance, it might seem that history repeats itself: again, we can assume that there was no direct consent given by Lacks or her family for the use of her cells in *After ALife Ahead*. Of course, the circumstances are different: while the dispossession of her rights in the 1950s was a direct result of oppression in terms of race and sex, nowadays, her cells have become commodified—it is morally and legally permitted to use them for the purpose of science, or, in this case, for art. But, considering the violent history of Lacks' cells as well as van Valen's call for designating them as a new species subject to a whole new form of market-driven evolution, one should ask: how is today's ethical treatment of Lacks' molecular remains any different from the 1950s? Not only is

[278] van Valen, Maiorana 1991, p. 72.

[279] Ashall 1986, p. 518.

[280] Luke 2017, n.p.

there no single mention of Henrietta Lacks in the exhibition space, but also the accompanying publications merely record her history in a footnote, excluding the substantial racial and gendered actualities.[281] Instead of seizing the opportunity to narrate a real-life history of bioethical oppression and reflecting on a problem as prevalent as ever,[282] Pierre Huyghe's uncritical approach toward HeLa cells reiterates the very same contextualization that most scientists worked with for decades: viewing her cells as nothing more than an anonymous mass to be used for a distinct purpose. In *After ALife Ahead*, Henrietta Lacks is reduced to the singular function of multiplying according to a recursively calculated set of data—however, steering clear of the political aspects of racism and sexism makes it seem as though there is no place for these pressing issues in an otherwise relationally conveyed world. This is all the more ironic when thinking of how cancer is still one of the most common bio-political individual fates.

Another example of such a visualization of cancer growth can be found in the movie *Annihilation* (2018) by Alex Garland, which poses the question: what would happen if Earth got cancer? An extraterrestrial biological organism, referred to as the Shimmer, hits a lighthouse inside a national park and slowly spreads to the neighboring areas. Not much is known about the occurrence—however, no-one who has entered the Shimmer has yet come out again. As a last resort, a special force of scientists is put together to go on an expedition to the core of the impact zone. As soon as they enter the realms, all of them lose their orientation as well as their track of time. Additionally, they stumble upon both beautiful and eerie mutations of the local flora and fauna. [Fig. 24] Throughout the course of the film, the Shimmer is represented as a form of planetary cancer which mutates and changes Earth's organism by mimicry and duplication on a molecular level. In fact, the determined leader of the task force, Dr. Ventress, admits that she only agreed to the expedition because of her status as a terminally ill cancer patient. In another scene, protagonist

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[281] In a review by Dorothea von Hantelmann of Huyghe's exhibition *UUmwelt*, on view from October 3, 2018 to February 10, 2019 at the *Serpentine Galleries*, which is included in the institution's press release, the author also refers to *After ALife Ahead*: "… The fact that the cells were taken without Henrietta Lacks' knowledge or consent caused a worldwide debate among scientists and bioethnicists." von Hantelmann 2018, p. 14.

[282] For example, in 2018, the right-wing Austrian government settled on a compulsory photograph on eCards, the health insurance identity card, in order to prevent misuse and identity theft—and promoted this proposition with a now-deleted animated video depicting people of color called Ali and Mustafa stealing and passing along eCards. This suggests that the only reason for establishing such an undertaking is deeply rooted in racism. Stajić 2018, n.p.

Lena, a professor of cell biology, is seen reading Rebecca Skloot's *The Immortal Life of Henrietta Lacks*. The movie could be termed as post-anthropocentric as the alien metastasis is not presented as destroying the planet—a worn-out trope of many science fiction classics like *The War of the Worlds*—but merely changing it. Of course, the Shimmer is responsible for many deaths, but on a more fundamental level, it strives for survival just like humans do. In the end, *Annihilation* is about the struggle for survival between two *different* forms of life.

The dichotomy of life and non-life

Another update on Foucault's theories on bio-power is Elizabeth Povinelli's conception of geontopower that she defines as "the late liberal governance of the difference between life and nonlife."[283] Akin to the definition of bio-power, she states:

> Geontopower does not operate through the governance of life and the tactics of death but is rather a set of discourses, affects, and tactics used in late liberalism to maintain or shape the relationship between life and nonlife.[284]

Povinelli states that Foucault's distinction of life and death is incomplete; additionally to the dichotomy of life and death in the discourse of life, there has always been a clear distinction between life (*bios*) and non-life (*geos*).[285] Moreover, Povinelli's approach is in conjunction with definitions of the Anthropocene as the age of fossil fuels which are "literally the decayed remnants of long-dead life-forms."[286] Carried to extremes, Povinelli's argument for an acknowledgment of the vitality of non-life could be further reinforced by contemplating geos as alive in either long-gone times or on a much larger scale of temporality. One of her many examples is the desecration of *Two Women Sitting Down*, a sacred site of the Kunapa people in Australia's Northern Territory.[287] In 2011, a mining company provoked the collapse of the landmark which led to a lawsuit. Povinelli notes:

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[283] Povinelli, Coleman, Yusoff 2017, p. 180.

[284] Povinelli 2017, p. 319.

[285] Povinelli 2016, p. 9.

[286] Klein 2014, p. 397.

[287] Povinelli 2016, p. 30.

> Given that both the anthropological and the legal judgment consider *Two Women Sitting Down* a geological formation represented by a human narrative, perhaps it goes without saying that the mining company's action within the lawsuit was not prosecuted as manslaughter, attempted murder, or murder but as a "desecration" under criminal liability law.[288]

Although the mining company was adjudged damages, Povinelli criticizes the mild penalty for something never coming back as well as the fact that the money was not paid out to the Indigenous custodians of the site. Indeed, companies destroy environmental sites like *Two Women Sitting Down* every day—which is exactly why Povinelli stresses that "a multitude of geological and meteorological modes of existence have prompted people to demand an ethical and political reconsideration of who and what should have a voice in local, national, and planetary governance."[289]

Moreover, the author continues her review of the trial of *Two Women Sitting Down* with a problem in language and states that, in contrast to beings conventionally considered as living, we lack words describing occurrences like mineralogical death. She gives an analogy to cells:

> Cells are said to have a proper and improper death—in a good death, a tidy death, the cell self-destructs; in an untidy death it swells, leaks, explodes—what biologists call respectively apoptosis as a programmed form of cell death and necrosis as an unordered and unintended form of cell death.[290]

Here, it is interesting how a controlled form of self-annihilation is understood as a good form of death while an accidental one, presumably through the hands of a human, is considered as bad. What does this binary opposition disclose about the ontology of HeLa cells? Obviously, since the cell strain still proliferates, the closest word we have to describe them is immortality. But perhaps they dispose of just as much *bios* as a human or have an equal number of *geos* as *Two Women Sitting Down*. Bio-power and geontopower should not become binary oppositions solely used for categorizing all kinds of entities. Instead, they can serve as helpful tools in revising whose voice can be heard and whose cannot. For example, in 2017, three rivers—the Whanganui in New Zealand as well as the Ganges and Yamuna in India—were granted the status of legal persons because of the ongoing threat posed on

[288] Povinelli 2016, p. 32.

[289] Povinelli 2016, p. 123.

[290] Povinelli 2016, p. 40.

their eco-systems.[291] Instead of acknowledging the consequences of the rivers' endangerment for the eco-system including the humans living with them, such problems will only be taken seriously once the rivers become persons in front of the law.

In conclusion, *After ALife Ahead* disposes of mechanisms of bio-power quite similar to a society; power is conveyed relationally. The most fundamental principle is the pattern of the Conus textile shell resembling Rule 30, a cellular automaton describing complex behavior—for example, the expansion of life. The pattern is also responsible for the bio-rhythm of *After ALife Ahead* as it controls the roof hatch's opening and closing. The other bio-political pillar is the collected set of data of movement, temperature, carbon dioxide, and humidity. The data is plugged into an algorithm regulating the proliferation of the HeLa cells. In turn, an increase or decrease in cells is transported to the virtual world with the help of the application. Like the movie *Annihilation*, the bio-political goals of *After ALife Ahead*, provided that there are any, are propagation and metastasis—or self-preservation at any cost.

2.8. Ruins

The ice rink where *After ALife Ahead* takes place is a ruin or derelict property. In the oeuvre of Pierre Huyghe, this is not an isolated case: "The majority of his [Huyghe's] works that explicitly foreground an open present have been undertaken amid incomplete structures, or within sites amenable to mutation, demolition, and reconstruction."[292] An early example is the work *Light Conical Intersect* from 1997 which projects the iconic film *Conical Intersect* from 1974 by Gordon Matta-Clark onto the very same site where it was produced. [Fig. 25] In the film, Matta-Clark and his team literally cut through the 19th-century buildings in the city center of Paris which must give way to a new museum building, the *Centre Georges Pompidou*. The artist, equipped with tools like an angle grinder, is performing physical labor to create a peephole in the edifice fit for demolition. Pamela M. Lee likens the shape of the conical intersect to a telescope and states:

> The artist's use of obsolete buildings slated for demolition inherited a viewership linked to a long history of urban destruction in Paris. *Conical Intersect* literally telescoped the past through the present, and in doing so it opened onto two of the most important architectural and urban planning

[291] O'Donnell, Talbot-Jones 2018, n.p.

[292] Barikin 2012, p. 44.

> controversies in Paris in the postwar era. In the compacted narratives of Les Halles and the Centre Georges Pompidou that follow, the repetitive cycles of progress and destruction articulate a different reading of community for site-specific art.[293]

In a similar vein, Huyghe's *Light Conical Intersect* telescoped Matta-Clark's work even further in time. If the original work can be understood as a critique of gentrification, the difficulty of such processes became even more pronounced: in 2018, Paris was voted as the second most expensive city to live in worldwide.[294] *Light Conical Intersect* is the projection of a past even more pressing in the future than at the time of creation.

Ethics and aesthetics of the ruin

Another approach toward ruins can be found in Huyghe's film *Human Mask* from 2014. The film follows a monkey working as a waitress in the town of Fukushima that has been evacuated and destroyed due to the nuclear catastrophe in 2011. The monkey, who is never shown without the human mask on, seems to roam around its former workplace aimlessly as if waiting for the people to return. In the debris, it only encounters other animals like a cat and some insects. Its desperate attachment to its quasi-human life before the catastrophe renders the monkey a hybrid of human and animal, while the ruinous environment serves as a mediator between these worlds.

Moreover, ruins are hybrids of time: they incorporate contradictory temporalities, as stated by Brian Dillon:

> The ruined building is a remnant of, and portal into, the past; its decay is a concrete reminder of the passage of time. […] At the same time, the ruin casts us forward in time; it predicts a future in which our present will slump into similar disrepair or fall victim to some unforeseeable calamity.[295]

Every ruin used to be a flourishing gathering place once or maybe even an utopia, for example, regarding Socialist architecture in Eastern Europe. Its decay resembles a modern-day *memento mori*, a constant reminder that every kind of architecture will have outlived its usefulness one day. However, sometimes the demolition of architecture is necessary for the destruction of an ideology: architect and theorist Charles Jencks attributed the death of modernist architecture to a ruin, the remnants

[293] Lee 2000, p. 185.

[294] Matamoros 2018, n.p.

[295] Dillon 2011, p. 11.

of the Pruitt-Igoe housing complex.[296] In theory, the complex designed by Minoru Yamasaki in 1954 and located in St. Louis was a modernist icon of social housing, but in reality, it was a failure of urban planning. Two years before the demolition, only a third of the housing was occupied, and the bigger part of the inhabitants lived below the poverty line.[297] Eventually, Pruitt-Igoe was demolished on July 15th, 1972. Roughly around the same time the 1968 student revolts in Paris as well as seminal publications[298] subsumed under the notion of Post-structuralism heralded the start of the ominous era of Postmodernism. In her essay on modern ruins, Gilda Williams states that the beginning of the contemporary period[299] is often exemplified by the destruction of the Twin Towers in 2001, which were also built by Minoru Yamasaki.[300] Williams reasons that the ruin in contemporary art signifies the breakdown of Modernism and notes that "as a fragment, a ruin is more loaded with meaning than when it was part of a whole."[301] However, the romanticization of ruins noted by Williams is a strange phenomenon: in most cases, ruins emerge from catastrophes like a natural disaster or war—it seems counterintuitive to feel nostalgic for such events, sometimes even for the period prior of destruction. Therefore, I propose that the fascination for ruins does not have to be in conjunction with a passion for catastrophe or a yearning for long-gone times, but instead with a possibility of stepping out of an anthropocentric conception of the world. In her essay, Williams references Georg Simmel's article *The Ruin* from 1907 which states that the ruin contains the possibility of "a site where nature and humankind work together to form a collaborative work."[302] The passage of time is truly the only constant we know of, and confiding in this indestructible certainty means to align oneself with all other

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[296] Jencks 2011, p. 45.

[297] Wendl 2013, p. 107.

[298] For example, Jacques Derrida's *De La Grammatologie* and Gilles Deleuze's *Différence et répétition* were published in 1968, while Michel Foucault's *L'Ordre du discours* was published in 1970.

[299] In general, there is no consensus when exactly the era of contemporary art began—to be fair, the question of an epoch of contemporary art is somewhat paradoxical. Mostly, the period during which art is deemed as contemporary stretches back to 1989 and the beginning of globalization. 1989 marks the fall of the Iron Curtain, the Tiananmen Square protests/massacre as well as seminal exhibitions like *Magiciens de la terre.*

[300] Williams 2011, p.94.

[301] Williams 2011, p. 95.

[302] Williams 2011, p.98.

things on Earth; my plants will wither, my flesh will rot, and the building I live in will crumble one day, but the movements of time are inexorable.

In *The Last of Us*, a post-apocalyptic action-adventure game by Naughty Dog from 2013, ruins are represented in such a manner. The main story is set ten years after the outbreak of the Cordyceps fungus turns humans into zombie-like creatures and transforms the United States into a giant dysfunctional ruin. After the collapse of the government, cities lay desolated, necessities like electricity and water supply ceased entirely and a vast sixty percent of the world population has perished.[303] Joel, a middle-aged man who lost his daughter in the chaos of the apocalypse, agrees to escort a young girl called Ellie across the country to a legendary resistance group called the Fireflies. As it turns out, Ellie is immune to the virus and could be of great assistance in finding a cure. The environmental design is one of the most astonishing features in the game: their journey throughout the USA shows nature slowly reclaiming the ruinous cityscapes, for example when Joel and Ellie encounter a herd of giraffes roaming freely and peacefully in Salt Lake City. [Fig. 26] In her book *Ruin Porn and the Obsession with Decay*, Siobhan Lyons states that "[R]uin porn is the new sublime."[304] The sublime is generally understood as something superior to the viewer, like standing in front of a skyscraper and looking up. The notion was used widely to describe works of Naturalism and Romanticism that depict nature as a superior force; thus establishing a new iconography of nature in the 19th century that can be seen as a precursor to modern-day post-apocalyptic narratives.[305] Throughout *The Last of Us*, the Cordyceps virus becomes a symbolic punishment of people unlearning how to live with nature: militias and bandits are shown to live in gated communities, focusing on defense and the rationalization of resources. Additionally, they hope to return to a form of pre-apocalyptic life one day. Morally supportable characters like Joel's brother, on the other hand, are accepting of the post-apocalyptic situation and try to find new ways of living, for example as an autarkic community generating electricity from hydropower and using agriculture to grow their own resources. Visually striking and morally distinct, *The Last of Us* is a post-anthropocentric video game rewarding those that integrate into the ruinous environment.

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[303] Hill 2013, n.p.

[304] Lyons 2018, p. 1.

[305] Green 2016, p. 749.

Ruins in East and West

The contemporary fondness toward ruins might be described best with the buzzword *ruin porn* that even evoked new leisure activities such as urban exploration.[306] Urban explorers research the history of abandoned buildings before finding a way to enter it and, in most cases, take photographs of the decaying surroundings. However, the hobby is often denounced as privileged since only people not having to deal with ruins on a daily basis seem to show interest. In a war zone, chances that residents would come up with the idea to romanticize and aestheticize ruins seem slim. The most popular sites for urban explorers include areas of former industrialization such as (former East-) Berlin, Detroit, Northern Italy or the Ruhrpott in Germany, the area just south of Münster. However, *ruin porn* aesthetics can be interpreted as more than a mere romanticization of decay: ”These images represent not only economic failure, but ideological failure, representing a break with modernized conceptions of cultural innocence and everyday enjoyment.”[307] In Eastern Europe, where ruins are far more common than in the Western parts, the ruin has a slightly different connotation. After 1991, many derelict and abandoned sites turned into a whole industry consisting of pubs, clubs, and cafes. The first ruin bar in Budapest, *Szimpla Kert*, was established in 2002 and primarily attracts foreign tourists.[308] In a way, the capitalization of derelict property seems absurd, but on the other hand, ruin pubs are an ecologically worthwhile form of re-use. However, how reasonable is it to sharply oppose the significance of the ruin in East and West? David Williams notes that there is still a political stigma attached to Eastern ruins:

> Given the explicit melancholic and nostalgic auras that engulf ruins of any kind, any study of postcommunist ruins is perhaps a priori doomed to either be, or be seen as, a kind of left-wing melancholia, a failed mourning for a lost utopia.[309]

The “failed mourning for a lost utopia” is all the more relevant for the ruins located in Budapest than the ice rink in Münster. Of course, every ruin is surrounded by an atmosphere of defeat given the fact that they were not able to pursue their purpose

[306] For one of the few publications concerning the history of this topic and also a practical guidebook by an urban explorer himself, see Ninjalicious 2005.

[307] Lyons 2015, n.p.

[308] Amon 2015, n.p.

[309] Williams 2013, p. 10.

or acquire a new one; any ruin operates on a logic of subsequent use that implies flexibility of significance. However, considering that many now-abandoned edifices in former socialist countries were built on a different kind of ambition that is nowadays referred to as "lost utopia", it seems safe to say that postcommunist ruins hold another layer of meaning: the reassurance of bearing witness to an entanglement of ideas, hopes, and undertakings that, at least in this form, will not come back. In this way, the ruins of Eastern Europe resemble fictional post-apocalyptic ruins in regard to reaching a point of no return.[310]

Of course, when the ice rink was built in 1981, the architects probably assumed that the building would always be used for ice skating. However, the versatility of the space goes beyond the constructor's intentions and its connotations are subject to change. Still, the re-use of ruins is handled differently in the East: here, the ruinous architecture will remain for much longer compared to the West. This is very evident in the case of Berlin, where whole areas of the Eastern part of the city are covered in ruinous terrain. Due to the city's division after World War II, governmental businesses like factories, companies, and training schools had to be erected in both the Eastern and the Western part. After the collapse of the German Democratic Republic (GDR) in 1991, most Eastern companies were forced to shut down as they could not compete on the free market, thus turning them into the "losers" of capitalism.[311] In the West, however, it is not unusual that buildings will be wrecked intentionally in order to create a new opportunity for investment. The constant drive for surplus in capitalism makes it more profitable to first demolish and then build new projects instead of reconstructing and re-using old architecture, which is always a costly undertaking. The intersections of the greed for profit as well as the attempt to re-write history is exemplified by the wrecking of the *Palast der Republik*, the parliament of the GDR. Officially, the building was demolished due to asbestos contamination in 2006 but considering the re-erection of the classical *Stadtschloss* on the same site, it seems like a convenient way to get rid of a communist icon in favor of an imperialist one.[312] Oddly enough, before the Palast der Republik was erected on these grounds, the ruin of the original Stadtschloss

[310] Please refer to chapter 2.9. for a broader discussion of the relations between the collapse of socialism and post-apocalyptic narratives.

[311] Williams 2013, p. 158.

[312] La 2010, p. 118.

was located there. The cat-and-mouse-play of ideology demonstrates that involvement with ruins always raises questions on ecological, economic, and ethical behavior.

Decay as an ecological model

In *The Radicant*, Bourriaud states that the urban landscape has become "a precarious, cluttered, and shifting environment."[313] Moreover, he writes that the cluttering of media and images shaped the contemporary era in such a way that it is impossible to return to a modernist proclamation of *tabula rasa*: "Thus, the end of Modernism coincides with the tacit acceptance of clutter as a way of life among things."[314] To Bourriaud, one of the manifestations of this cluttering is the ruin:

> Beginning in the early 1980s, the problem of clutter is reflected by the heavy presence of images of ruins and debris in theoretical writings and artistic practices. The modernist edifice has crumbled and collapsed, and its signs are floating and adrift, since they are no longer anchored by the weight of history.[315]

This statement suggests the assumption that the significance of the ruin is fragmented, thus making it a perfect symbol for rhizomatic ways of thinking de-hierarchization and decentralization. However, Bourriaud fails to notice that the history of the ruin in art goes farther back in time than the 20th century: in ancient times, architectural spolia were used to triumph over enemies, the entire era of Renaissance was proverbially built upon the foundation of some ancient Greek ruins, and Romanticist painters like Caspar David Friedrich or Hubert Robert frequently incorporated ruins in their works. [Fig. 27] Insofar, the significance of the ruin goes way beyond a postmodern notion of the fragment. When thinking of the ruin as a process, as shown above, the ideological focus shifts away from a one-dimensional critique of Modernism to an appreciation of decay and to incorporation of the derelict into the present.

In her review of *After ALife Ahead*, Hettie Judah likens the ruinous quality of the work to an ordinary building site near Huyghe's work:

> No doubt, its excavations would have turned up evidence of earlier structures and civilisations. Insects had likely made a home there, likewise opportunistic plant species. Bacteria, spores, seeds, patterned-shelled

[313] Bourriaud 2009, p. 88.

[314] Bourriaud 2009, p. 47.

[315] Bourriaud 2009, p. 48-49.

> snails, migrant GMOs: all these small, fleet lifeforms were, in probability, flourishing. Cancer cells, too, were certainly present on site, incubated within the body of a human host.[316]

This conclusion suggests that in all its complexity, *After ALife Ahead* is a mere simulation of local eco-systems. Of course, this statement is highly abstracted, as it calls the value of *After ALife Ahead* as an artwork into question: why is Huyghe's work a part of *Skulptur Projekte*, but not the building site Judah observed? Perhaps it is more meaningful to think of *After ALife Ahead* as a blank space, a placeholder between what was before and what will come after. Then, it becomes one of the many permutations of the specific site in Münster which used to be an iceberg and an ice rink and will become an apartment complex of 500 individual housing units soon.[317] Similar to the work *Light Conical Intersect*, Pierre Huyghe merely projects an eco-system to a site that has always contained mutations of an eco-system.

2.9. The Post-Apocalypse

Over the last twenty or thirty years, there has been an increase in post-apocalyptic media: movies on natural disasters, zombie-survival-games, and novels taking place after the end of the world mushroomed. In *The Future as Catastrophe*, Eva Horn relates this phenomenon to the era of the Post-anthropocene:

> Humankind looks back upon itself *after* its end. It is a gaze in the future perfect, a future that *will have been*. This perspective, that is, a gaze looking back on the future *as past*, is emblematic of our current relation to the future.[318]

The concept of time in post-apocalyptic fiction could be deemed retro-futuristic; the future displayed is already located in the past.[319] So how does this apprehension of time relate to our contemporary era? Although it is often stated that we are living in more peaceful times than ever before, a look back at the recent past shows a different narrative: the 21st century shows a rise in terrorism, nationalism, social injustice, a widening gap between rich and poor thanks to turbo-capitalism, an alarming increase in right-wing populism, and, of course, a mass of environmental disasters both due to unswayable reasons and caused by humans. Insofar, it should

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[316] Judah 2017, n.p.

[317] Kalitschke 2017, n.p.

[318] Horn 2018, p. 17.

[319] For a closer inspection of retro-futurism, see chapter 2.3.

come as no surprise that post-apocalyptic fiction is on the rise as well—it seems to take on a cathartic role. Before I contextualize *After ALife Ahead* as a post-apocalyptic experience, I want to clarify the differences between the notions of utopia, dystopia, and post-apocalypse.

Utopia, dystopia, and the post-apocalypse

The word utopia translates from Greek to *non-place* or *good place* and may refer to a multitude of ideas like an emancipated society, political or economic system.[320] For Theodor W. Adorno, utopias served as a mode of critique in the sense that the imagination of superior principles can help to create a just set of rules for society.[321] In regard to processing of contemporary occurrences, utopias tend to highlight the positive aspects of reality, thus establishing an optimistic outlook into the future. The term stems from Thomas More's novel *Utopia* from 1516 which depicts an ideal society.[322] However, fictional utopias are more than ever only idealistic for a part of the society, for example, the wealthy ruling class in Fritz Lang's classic science fiction movie *Metropolis* (1927)*;* the enacted upbringing and childhood of Truman Burbank in Peter Weir's *The Truman Show* (1998) or the planet of Pandora at risk of exploitation in *Avatar* (2009) by James Cameron. Thus, utopia is always connected to dystopia, which describes a pessimistic outlook and enhances the negative parts of reality, staying in the realm of the original meaning of *bad place*.[323] Examples in fiction include Margaret Atwood's novel *The Handmaid's Tale*, Terry Gilliam's technocratic satire *Brazil* or the Wachowski sisters' trilogy *The Matrix*. However, dystopian narratives are always a direct consequence of human action: they may include a totalitarian government, or a future ruled by mega-corporations, but do not contain an inexplicable, sublime element like a divine punishment or a natural disaster. There are two reasons why *After ALife Ahead* is post-apocalyptic: first, due to the exclusion of human agency, and second, in contrast to utopias and dystopias, there is no categorical judgment— the work is neither showing a good nor a bad scenario. Additionally, the imprecision of the terms utopia and dystopia and their

[320] Knickerbocker 2010, p. 347.

[321] Schulzke 2014, p. 316.

[322] Moylan 2000, p. 72. Modern-day examples can be found in feminist utopian literature such as Joanna Russ' *The Female Man* or *The Dispossessed* by Ursula K. Le Guin.

[323] Knickerbocker 2010, p. 348.

shift in meaning depending on perspective, as well as the lack of a disaster that reshuffles established hierarchies, make the post-apocalypse a more reasonable description. It refers to the aftermath of the inevitable catastrophe of the end of the world. The literal meaning of *apokálypsis* is an *uncovering* or *unveiling*, which stems from the Book of Revelation.[324] One of the main pillars of Christian eschatology, John the Apostle describes the epic battle between heaven and hell and the Second Coming of Jesus Christ. Although there have been apocalyptic tales before the emergence of Christianity, for example in the story of Noah and the Ark, the apocalypse is central to the belief of salvation—eventually, the end of the world is what most religious Christians are looking forward to. Instead of divine punishment, the apocalypse sorts out between those worthy of going to heaven while the rest is sent to hell—as will be seen, this is a central distinction in post-apocalyptic narratives, too.

Along with the slow replacement of religion with science during the Enlightenment, the Christian connotation of the apocalypse begins to fade. In her book *Evil in Modern Thought*, Susan Neiman traces a genealogy of catastrophe that shaped the era of modernity. She links the secularization of the apocalypse to the great earthquake of Lisbon in 1755 responsible for the deaths of ten thousands of people, ultimately raising the question: "how can God allow a natural order that causes innocent suffering?"[325] Eva Horn also mentions the anomalies in climate during the *year without summer* in 1816, when the ash cloud of a volcanic eruption darkened the sky in the Northern hemisphere for weeks.[326] Over the course of the summer, Mary Shelley was staying in Geneva with her husband Percy Bysshe Shelley and Lord Byron, where she also wrote her novel *Frankenstein*.[327] Although there is a shift in the cause of the apocalypse along with its secularization, the narrative elements stay the same: nature takes on the role of a punishing deity and is shown as operating on its own, often inexplicable terms. It becomes the non-human agency with the capacity to destroy the world.

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[324] Knickerbocker 2010, p. 346.

[325] Neiman 2002, p. 3.

[326] Horn 2018, p. 73.

[327] This is shown in the beginning of the movie *Bride of Frankenstein* from 1931, the first sequel to James Whale's *Frankenstein*. The scene is available on YouTube, URL: https://www.youtube.com/watch?v=o2yKqa4VSRE (8.4.2019).

During the 20th century, atomic warfare fostered the possibility of a point-and-click end of the world which led to governmental scenarios as demonstrated by Herman Kahn during the Cold War.[328] Due to the development of weapons of mass destruction like the nuclear bomb as well as their appalling demonstration in Hiroshima and Nagasaki, destroying the world never seemed so easy.[329] These developments raise the question of obligation: while a natural catastrophe is usually portrayed as self-emergent, Kahn's doomsday device pinpoints the responsibility of Earth's future to a single person.

A psychoanalysis of fantasies of the end of the world

But why do post-apocalyptic narratives enjoy such great popularity? The following examples imply a shift toward the end of the world in the media: from virus outbreaks in movies like *28 Days Later* (2002) or *I Am Legend* (2006) to natural catastrophes in *The Day After Tomorrow* (2004) and *2012* (2009); from zombie survival horror movies like *Dawn of the Dead* (2002) and the series *The Walking Dead* (since 2004) to satires of the genre like *Shaun of the Dead* (2004) or *Warm Bodies* (2013). The video game industry, too, has been a reliable distributor of narratives of annihilation: from the zombie shooter series *Resident Evil* (since 1996) to a post-apocalyptic world without humans in the puzzle game *Portal* (2007) to emotionally challenging action-adventures like *The Last of Us* (2013), there is something for everybody.

But why do we love to immerse ourselves in ideas of the end of the world? Perhaps the permanent reflection on the end of the world serves as a reminder to never let it come so far. However, considering the plethora of fiction on climate change, the desired consequence is a long time coming. Slavoj Žižek gives another explanation in the form of a theory of catharsis. Considering the mass of catastrophes in the 21st century, watching fictional characters fighting through the apocalypse may take on a consoling function as it implicates the possibility to reflect on what to do in case of emergency. Referring to the Christian apocalypse, Žižek writes:

> Their message is: yes, of course, there will be a catastrophe, but watch patiently, don't believe in it, don't get caught in precipitous extrapolations,

[328] Galison 2014, p. 39.

[329] Moon 2014, p. 4.

> don't give yourself up to the properly perverse pleasure of thinking "This is it!" in all its diverse forms (global warming will drown us all in a decade, biogenetics will mean the end of being-human, et cetera, et cetera). Far from luring us into a perverse self-destructive rapture, adopting the properly apocalyptic stance is—today more than ever—the only way to keep a cool head.[330]

Maybe the rise of post-apocalyptic media serves as a form of emergency training for a real-world catastrophe. If preparation and knowledge provide us with self-confidence and a feeling of safety, the only real danger about post-apocalyptic fiction is to simply accept the impending and inevitable catastrophe; instead of changing the root of the problem, it is good enough to merely be prepared for the worst-case scenario. In the end, this way of thinking results in a form of nihilistic passivity that ultimately renders every chance at improving the future meaningless. But how do we know when exactly it is too late to take action? Eva Horn discusses the possibility of a catastrophe without events:

> Climate change may be a catastrophe without event, but this does not mean that nothing happens. It involves a variety of local scenarios and symptoms but is hard to represent "as such." Gradual warming lacks the perceptibility of an ice age or the brutal suddenness of a flood or nuclear winter. Even if certain tipping points can theoretically be predicted, the consequences of a shift of the entire system often cannot. And the tipping itself is hard to anticipate—before it is reached, everything seems to be following its normal course.[331]

According to journalist Malcolm Gladwell, the tipping point is "that one dramatic moment in an epidemic when everything can change all at once"[332] or "the moment of critical mass, the threshold, the boiling point."[333] A concept similar to the "catastrophe without event" is Timothy Morton's definition of the *hyperobject*: "things that are massively distributed in time and space relative to humans".[334] Hyperobjects are so gigantic, they simply go beyond the human faculty of imagination. Morton gives the examples of black holes, the biosphere, or climate change. Perhaps the fear of overlooking the apocalypse is what really fuels the demand of narratives of the end of the world—then, the constant lookout for the

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[330] Žižek, Gunjević 2012, p. 80.

[331] Horn 2018, p. 153.

[332] Gladwell 2000, p. 9.

[333] Gladwell 2000, p. 12.

[334] Morton 2007b, p.1.

tipping point bears the possibility of changing our actions in order to prevent the catastrophe.

The apocalypse of *After ALife Ahead*

The difference of contemporary media to *After ALife Ahead* is that the latter is a post-apocalyptic experience. This does not mean that consumers of movies, books, and especially games let these media wash over themselves. However, their ability to immerse themselves in the fictional world is more limited. Of course, there are numerous possibilities to extend a science fiction universe to the real-world, for example, with cosplay or the writing of fan fiction. But, in the end, these activities resemble reenactments of a writing canon and are thus restricted by certain boundaries of thematics, aesthetics, or ethics. *After ALife Ahead*, on the other hand, is also made of a fixed set of rules expressed in distinct aesthetical conditioning but provides no singular narrative to make sense of the work. As discussed in the chapter on cosmology, comprehending the relations in the work through observation only leads to a limited understanding of it. Not that a fragmentary experience of *After ALife Ahead* could not leave an enormous expression—but a thorough appreciation of Huyghe's work will be more nuanced if dealing with it on another level as well. However, *After ALife Ahead* has something to offer that other media do not, and that is the direct participation in the work. For example, although I have consumed a lot of post-apocalyptic games and movies alike, *After ALife Ahead* provided me with a missing piece of a puzzle: the concrete *feeling* of the end of the world. Now, of course, some people experience profound existential anxiety after, for instance, climbing a mountain or riding a rollercoaster; but in my personal experience, seeing what the world could look like without humans equipped me with what Žižek called the "properly apocalyptic stance".[335] Just like *Biosphere 2*, the closed-off eco-system of the Earth, *After ALife Ahead* is artificial; but while the former simulates catastrophe— "[il] tente d'exorciser les conditions de la catastrophe en faisant la synthèse artificielle de toutes les données de la catastrophe"[336]—Huyghe's work takes place *after* the catastrophe. Visitors do not know what happened or how the apocalypse came to be. This is a trick also used in

[335] Žižek 2012, p. 80.

[336] "It tries to exorcise the conditions of the catastrophe by making an artificial synthesis out of all the data of the catastrophe." Translation by the author. Baudrillard 1992, p. 127.

science fiction to shift the focus away from pre-apocalyptic times. For example, in the universe of *The Walking Dead*, it is unclear what causes the zombification of humans—but since the virus seems to affect everyone no matter in what way they die, we can deduce that people were already contaminated from the very beginning. Indeed, the destruction of the old world and the values it represented constitutes the biggest asset of producing post-apocalyptic fiction: establishing a new cosmology or order demands new values. In her essay on morality in *The Walking Dead*, Julia Round writes:

> Accepting that our world and its events are random and without moral purpose or meaning is distressing—we want this planet to be a warm and welcoming place; not a cold, uncaring one.[337]

Although it may seem counterintuitive at first, a "warm and welcoming place" or a better sense of morality can arise from the post-apocalypse. In response to *After ALife Ahead*, this means the destruction of the values of the Anthropocene: subject-object-relationships, humans as the summit of creation as well as binary oppositions of nature and culture respectively living and non-living. The eco-system has no place for humans, or, it doesn't need humans in order to operate. The experience of exclusion from a well-functioning system or society leads to a re-evaluation of the self: why don't I belong to the system, and could I even be a burden to it?

Additionally, *After ALife Ahead* works similarly to other works that have been deemed post-apocalyptic. For example, in *Seizure* from 2008, Roger Hiorns uses copper sulfate crystals to cover an entire apartment in shiny blue minerals. [Fig. 27] The apartment is located inside a modernist housing block in London ready for demolition, similar to the Pruitt-Igoe complex. As J. J. Charlesworth writes, the question *Seizure* poses is: "what kind of life can be lived in this place?"[338] The answer is: not an anthropocentric kind of life. Just because the environment in *Seizure* is unlivable for humans, it is not unlivable per se. The same could be said about *After ALife Ahead*: just because there is no place for humans does not mean that humans are not appreciated in the work. In fact, anthropocentrists might not enjoy visiting *After ALife Ahead*, but for the post-anthropocentrist who can resonate with the *GloFish* or the HeLa cells, the work takes on a comforting role similar to the post-apocalyptic media discussed above. Ideally, the experience of an artwork like

[337] Round 2012, p. 157.

[338] Charlesworth 2008, p. 54.

After ALife Ahead leads to an uncontrollable urge to move beyond it: to critically reflect its indications and to put whatever considerations it implied into practice. For a work addressing ecological disasters, this can lead to changes on a personal scale such as emission reduction, abandonment of meat and dairy, support of local distributors as well as engagement in activism, whether that means volunteering, demonstrating, or simply campaigning for one's beliefs and values.

The annihilation of capital in the Capitalocene

Another aspect that makes *After ALife Ahead* post-apocalyptic is the financing: according to Kaspar König, artistic director of *Skulptur Projekte*, the cost of *After ALife Ahead* exceeded €1 million.[339] Although Pierre Huyghe claimed this as a blow-up of numbers, he admits to an exorbitant cost somewhere between €700.000 to €895.000.[340] Usually, an artist commissioned by *Skulptur Projekte* receives a funding of €35.000 to establish their project.[341] In Huyghe's case, the galleries representing his work—Esther Schipper, Marian Goodman Gallery, Galerie Chantal Crousel, and Hauser & Wirth—pooled together the necessary capital.[342] Although it is understandable that a project like *After ALife Ahead* is expensive, the difference in amount to the other commissions of *Skulptur Projekte* is astronomic. Moreover, it is especially awry when thinking about how the dismantling of *After ALife Ahead* after a mere three months of the exhibition must have led to an enormous financial loss. So, what kind of shift in value has happened over this time? Following Isabelle Graw's discussion of Pierre Bourdieu's theories of economic and symbolic capital, we can derive that the value of an artwork will always be a combination of both.[343] Therefore, the symbolic value of *After ALife Ahead* must be enormous to catch up with the estimated cost of €1 million—and indeed, it can be contributed to his exhibition at *Skulptur Projekte* that Huyghe made it to the second place in

[339] Luke 2017, n.p.

[340] Russeth 2017, n.p.

[341] Luke 2017, n.p.

[342] Pierre Huyghe explicitly acknowledges his galleries in the exhibition catalogue. Skulptur Projekte Münster 2017b, p. 464.

[343] Graw 2008, p. 26.

ArtReview's Power 100 in 2017.[344] Moreover, Huyghe and his team knew about the brief duration of *Skulptur Projekte*, yet they still decided to create such an expensive project. Perhaps they speculated upon the city of Münster acquiring the work—although it is hard to imagine that the price for the work as well as for maintenance would have been reasonable.[345] Therefore, the exaggerated economic devaluation of *After ALife Ahead* resembles artistic practices in the field of institutional critique—first, because the whole work is withdrawn from the art market and therefore from the circulation of capital, and secondly because it proverbially burnt capital almost like the art duo K Foundation in their performative film *Watch the K Foundation Burn a Million Quid* from 1995. Therefore, *After ALife Ahead* performs a slightly perverted take on institutional critique—that completely coincides with the didactics of *Skulptur Projekte*—as an attitude denying surplus value toward the art market. However, the work also addresses the question on the role of capital in the Capitalocene: in the end, why would we even need money after the apocalypse?

In the aforementioned films, shows, and video games, contemplating the collapse of society goes hand in hand with a condition of disorganization since the discontinuation of infrastructure renders it impossible for any form of governmentality[346] to prevail. Thus, the disintegration of nation-states, economic systems, and global organizations concurrently heralds the end of capitalism. If we were to believe most post-apocalyptic narratives, chaos and anarchy would emerge, people would take laws into their own hands and resort to ethics of *an eye for an eye and a tooth for a tooth* as well as looting and anthropophagy.[347] The replacement of money with barter goods and capitalism with a basic system of exchange seems plausible—but why does it take, to speak frankly, such a cruel vision of the end of the world to imagine a different kind of system? In *This Changes Everything*, Naomi Klein gives the following answer: "[…] changing the earth's climate in ways that will be chaotic and disastrous is easier to accept than the

[344] Buck 2017, n.p.

[345] After every *Skulptur Projekte*, the city's administration usually acquires one or more works and keeps them on their original sites.

[346] In a lecture from February 1st, 1978 at the Collège de France, Foucault defines governmentality as "the art of government". Foucault 2009, p. 107-108.

[347] The motif of anthropophagy is very common in post-apocalyptic media and can be interpreted as the devouring of any human morality and benevolence left. It might emerge from destitution (e.g. *Snowpiercer*, 2013), as a means for self-sustainability (e.g. *The Walking Dead: Season One* (video game), 2012) or as a mode of production for the exchange of goods (e.g. *The Road*, 2009).

prospect of changing the fundamental, growth-based, profit-seeking logic of capitalism."[348] This seems to resonate with Frederic Jameson's famous quote:

> Someone once said that it is easier to imagine the end of the world than to imagine the end of capitalism. We can now revise that and witness the attempt to imagine capitalism by way of imagining the end of the world.[349]

According to Jameson's logic, in contrast to the times before 1989, there is no reasonable alternative to the capitalist system.[350] This means that capitalism has been established to such an extent that the only *real* alternative seems to be the end of the world. Matthew Fisher coined the term "capitalist realism", an analogy to socialist realism, to describe this condition as "the widespread sense that not only is capitalism the only viable political and economic system, but also that it is now impossible even to *imagine* a coherent alternative to it."[351] However, far from serving as a sort of capitalist diversionary tactic, the consumption of post-apocalyptic media can actually be a form of critique—when questioning what could have been done to prevent the apocalypse in the first place. This would require the consumer of post-apocalyptic media to shift from the perspective of a passive victim of a crisis yet to happen to an active resistance fighter of the impending future. Moreover, post-apocalyptic narratives are never about the end of the world, but an alteration of the course of history: in true utopian fashion, they show up possible new beginnings.

So how can we interpret *After ALife Ahead* in terms of the apocalypse after the Capitalocene? In *The Rise of Cheap Nature*, Jason W. Moore suggests the use of the term Capitalocene instead of Anthropocene for two striking reasons: first, because the establishment of capitalism relied on what Moore refers to as "cheap nature" or the splitting up of natural resources with the aid of science on the one hand and the market economy on the other in order to commodify nature.[352] Through the alienation of nature from human life, nature became quantifiable and

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[348] Klein 2014, p. 203.

[349] Jameson 2003, p. 76. Sometimes, the quote is attributed to Slavoj Žižek, while it actually stems from H. Bruce Franklin's critique of science fiction writer J. G. Ballard from 1979. Beaumont 2014, p. 79.

[350] This conclusion also resonates, albeit from a whole different angle, with Francis Fukuyama's neo-liberal interpretation of the end of history: with the collapse of the USSR, democracy and capitalism prevailed as the most viable political respectively economic systems. See Fukuyama 1992.

[351] Fisher 2009, p. 2.

[352] Moore 2016b, p. 86.

thus sellable. This would not have been possible without Cartesian dualism and its propagation of thinking in binary oppositions:[353] contrasting nature with culture (or art) equals driving a wedge between these alleged entities which covers all the connections between them—most prominently, humans. This leads to the second reason arguing for the Capitalocene: the notion of the Anthropocene is still trapped in the binary opposition of human and nature. Moreover, it refers to the development of the steam engine as a starting point for this new geological era, thus localizing it in a Eurocentric context—while still addressing all of humanity as offenders of the ecological crisis.[354] Obviously, this way of thinking is not only oppressive toward non-European peoples, but also exhibits a limited understanding of capitalism: its emergence can be traced back to the end of the Middle Ages with the disintegration of the feudal system in Europe, the beginning of colonialism as demonstrated by Columbus, and the establishment of modern science through Nicolaus Copernicus and Galileo Galilei. According to Moore, "The genius of capitalism […] has been to treat the work of nature as a 'free gift'."[355] Moreover, Moore stresses that the majority of humans—virtually all women, people of color, and, to some extent, white men—were thought to be a part of nature, thus making their work just as exploitable as resources:

> This is the disproportionality at the heart of capitalism between 'paid work', reproduced through the cash nexus, and 'unpaid work', reproduced outside the circuit of capital but indispensable to its expanded reproduction. Every act of producing surplus value, then, depends upon a disproportionately greater act of appropriating the unpaid work of human and extra-human natures.[356]

The endless striving of accumulation of wealth and surplus value under capitalism is unsustainable to such an extent that we will be faced with a real apocalypse at the latest when nature's resources are exhausted.[357] In fact, this could be the kind of future demonstrated in *After ALife Ahead*: the denial of surplus value and self-

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[353] Moore 2016b, p. 83.

[354] Moore 2016b, p. 81.

[355] Moore 2016b, p. 112.

[356] Moore 2016b, p. 92.

[357] However, Naomi Klein prefers to speak of *extractivism* instead of the Capitalocene since other politico-economic systems, for example, the USSR or many left-wing nation-states in Latin America, rely just as much on fossil fuels and therefore produce under equally ecologically unsustainable conditions as capitalist countries. Klein 2014, p. 401-403.

withdrawal from any kind of market is putting an end to the traditional model of the circulation of capital, and, in conclusion, the Capitalocene. In this way, Huyghe's work shows a future scenario of a world *after* capitalism. Of course, one could argue that through his work, Huyghe's value only shifted from the economic to the symbolic level, ultimately giving him the power to generate even more surplus value and then translate it again to capital. While this might be true to some extent,[358] in the case of *After ALife Ahead*, there is no money, no future, no symbolic—only an entanglement of beings after the end of capitalism. Moreover, analogous to the majority of post-apocalyptic media, the work depicts not an end but a beginning—therefore, it can be interpreted as a process that we might look forward to, but are still able to prevent in the present.

So, does this mean that we should lean back and wait for Earth's resources to be exploited until the apocalypse descends upon us? Definitely not. But perhaps the constitution of *After ALife Ahead* serves as a vehicle to such a turning point: as a work of relational art, it depends on the engagement from visitors. Since the eco-system operates autonomously, participation is instigated through exclusion: provoking aforementioned questions on the affiliations of humans to the system, which, of course, due to its recursive structure, cannot be separated from it.[359] Actually, for the post-anthropocentric at heart, *After ALife Ahead* might depict a desirable scenario of a peaceful symbiosis of heterogenous species, events, and processes existing in a future without capitalism—thus rather inciting the question on how to arrive at such a scenario than how to avoid it. However, two things prevent us from doing so: first, the lack of humans inside the system is no coincidence but suggests that such a world is only possible once humans have disappeared. Secondly, we may not forget that Pierre Huyghe is operating from the present. As has been shown throughout this thesis, the present is far from being characterized by a peaceful co-existence between humans and non-humans, living and non-living beings, and everything in between. *After ALife Ahead* is nevertheless embedded in the very specific structures of the mega-exhibition which are not quite famous for their stance on sustainability and ecological awareness. Referring to *documenta 13* in 2012, where a variety of ecologically engaged artworks were

[358] For example, regarding the revenue generated from his exhibitions or his income as an artistic director at Okayama Art Summit 2019. Ishikawa Foundation 2017, n.p.

[359] For a broader discussion of humanity's countless interventions in the eco-system, please see chapter 2.5.

exhibited, T.J. Demos asks: “Is it easier to imagine the end of the world than the end of the unsustainable mega-exhibition?”[360] Sadly, *Skulptur Projekte* does not seem to focus on ecological sustainability in their mission statement, either, thus proving the prevalence of Demos’ statement.[361] Therefore, it is necessary to dig deep into *After ALife Ahead*, past the spectacle of the exhibition and the lack of direct political engagement—otherwise, the work is at risk to remain in the ivory tower of theory. This is not unlike the difficulty surrounding post-apocalyptic media, which contain the possibility of motivating consumers to take action—but, of course, this is up to each individual. Nevertheless, as a work of relational art directly including visitors, a critical engagement with *After ALife Ahead* can lead to a more substantial examination of environmental and post-humanist issues.

[360] Demos 2016, p. 256.

[361] Here, I am referring to the exhibition’s website, URL: https://2017.skulptur-projekte.de/#/En/Information (7.8.2019).

3. Conclusion

With regard to his exhibition at *Los Angeles County Museum of Art* (LACMA) in 2014, Pierre Huyghe stated: "I don't want to exhibit something to someone any more. I want to do the reverse: I want to exhibit someone to something."[362] This reads like a great concession to post-anthropocentrism, paving the way for subjects and objects to take on interchangeable positions. *After ALife Ahead* is a consequent realization of this concept: hybrids, processes, artificial intelligence, and animals are intermingled and become increasingly indistinguishable and inseparable from one another. Evidently, an approximation towards complexity outlines an avoidance of objectification and thus seems to be the only way to overcome the ecological crisis that humanist thinking presents to Earth. Unification, on the other hand, is not the goal of the eco-system since it thrives on mutation and evolution—learning how to navigate through differences is a promising possibility to get in tune with our heterogenous world and appreciate interspecific alterity.

The consumption of post-apocalyptic media can take on a supporting role—subject to the condition that we break through their spectacularization, critically reflect on it and change our demeanor accordingly. As shown throughout this thesis, ecological issues are often approached via post-apocalyptic scenarios that suggest that the end of the world and the end of capitalism coincide—thus bestowing some sort of messianic salvation on the crisis. While a pessimist might counter that any form of submission to the spectacle will always result in supporting the capitalist system we might ask: is sitting back and waiting for the end of the world any better? Considering the pressing urge of the environmental crisis, such claims are not only preposterous but also harmful. By now, we may only hope that there is still a chance to change tack—even if the only sustainable option is to shut down the global economy, as suggested by former UN climate change expert Yvo de Boer.[363] However, if we really want to prevent things from going from bad to worse, we should focus on doing everything we can, even if it means engaging in the spectacle and capitalism.

After ALife Ahead provides us with an example of a post-apocalyptic scenario that seems desirable for some and repellent for others—in the end, the

[362] Theung 2014, n.p.

[363] Klein 2014, p. 181.

evaluation will always be subjective. What we all may take away from it is the appreciation of how far we have come already in the question of alignment of contradictions that can lead to a much more inclusive and heterogenous society. On the other side, *After ALife Ahead* also demonstrates the issues we still need to resolve: sustainable and ethical dimensions to an artistic practice specifically and of exhibition structures in general. When interpreting *After ALife Ahead* as a post-apocalyptic mode of critique, we may not only be consoled by the "proper apocalyptic stance", but also have the knowledge on how to make the scenario even better in real-life at our own disposal.

In another way, *After ALife Ahead* might not even be a work of art at all, as Hettie Judah suggests.[364] Instead, it is an alive eco-system that can be found almost anywhere, independent from the human categorizations of nature and culture. By advocating for complexity and the inversion of the subject and object, *After ALife Ahead* deconstructs the notion of art and disintegrates it in the concept of natureculture: it certainly becomes a work of art through its contextualization in *Skulptur Projekte Münster*, but besides that, it could also be a scientific experiment of bio-technical evolution, an apocalyptic waste of money or an excavation site; just like all the eco-systems inhabiting the same site for millions of years to come. The title suggests that the work is concerned with the notion of the afterlife, but Pierre Huyghe presumably did not mean in a religious way. Instead, *After ALife Ahead* privileges process: it simply addresses what forms of life and non-life can emerge on a previously differently connoted site. Drawing on vitalist theories, the geological and technological elements of the work have either been alive at another time or developed a life of their own. Although the eco-system did not emerge from its own, it operates autonomously and independently from the human notions of religion, life, culture, and a possible next world. Therein lies the post-apocalyptic and almost prophetic aspect of *After ALife Ahead*: the renegotiation of these notions heralds a new age, the age of Post-anthropocene or the Post-capitalocene.

[364] Judah 2017, n.p.

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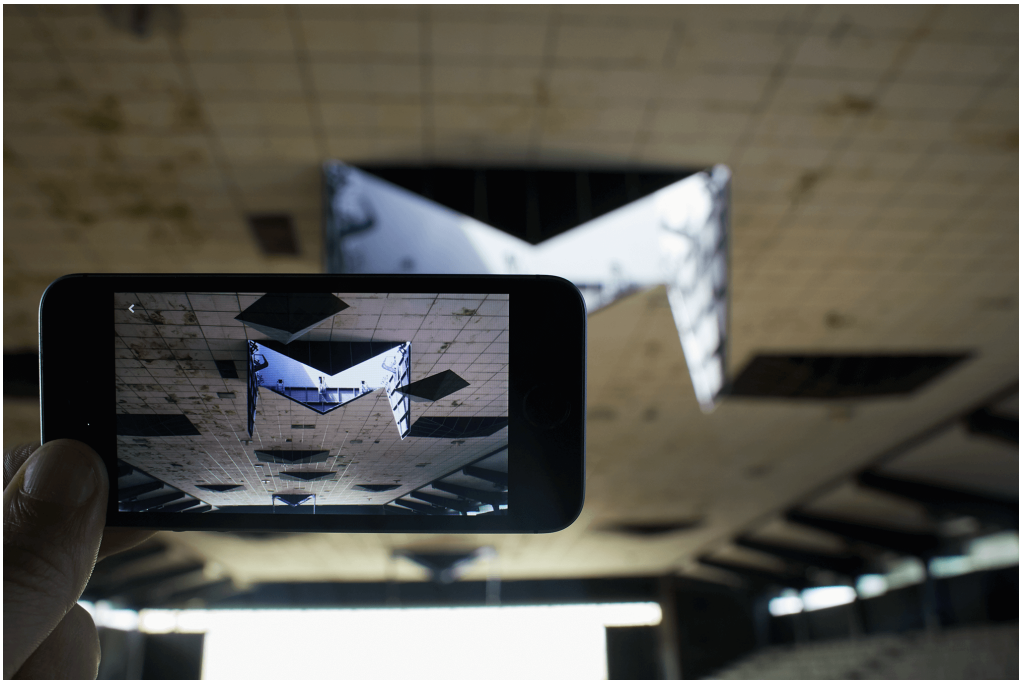

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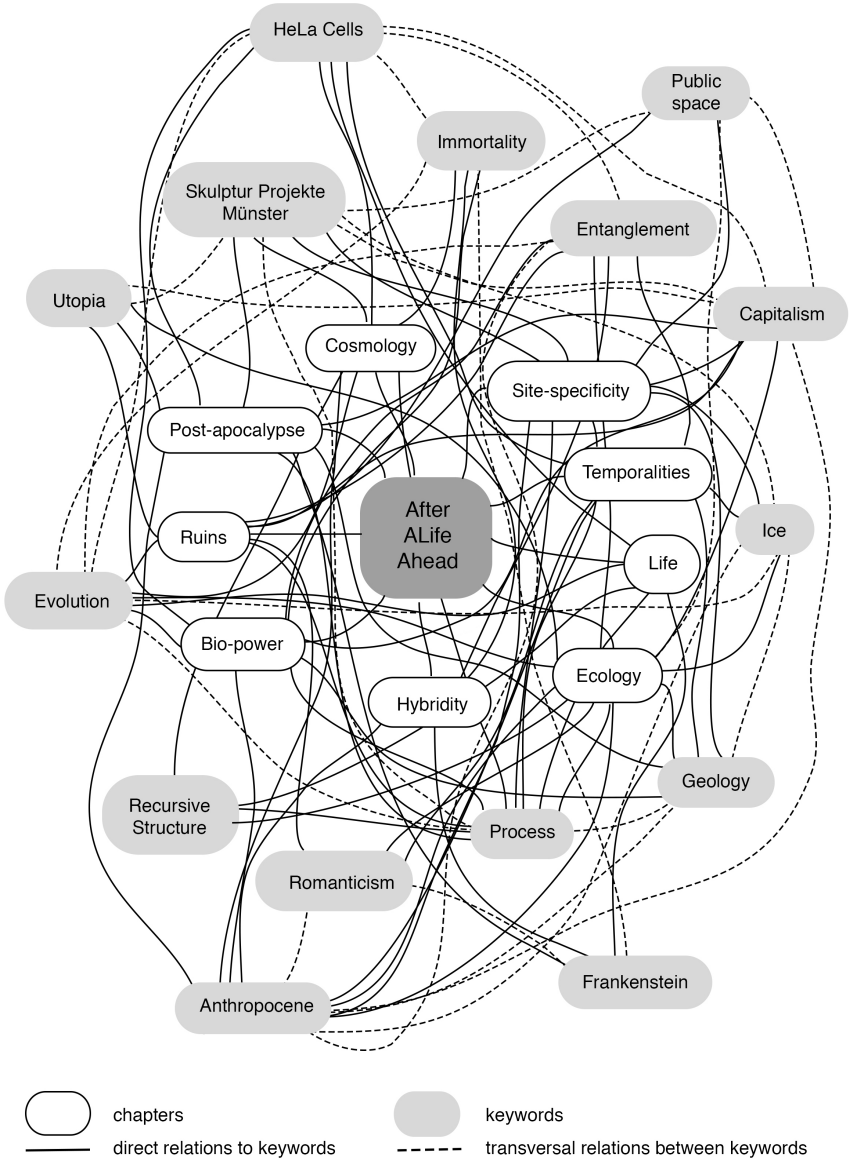

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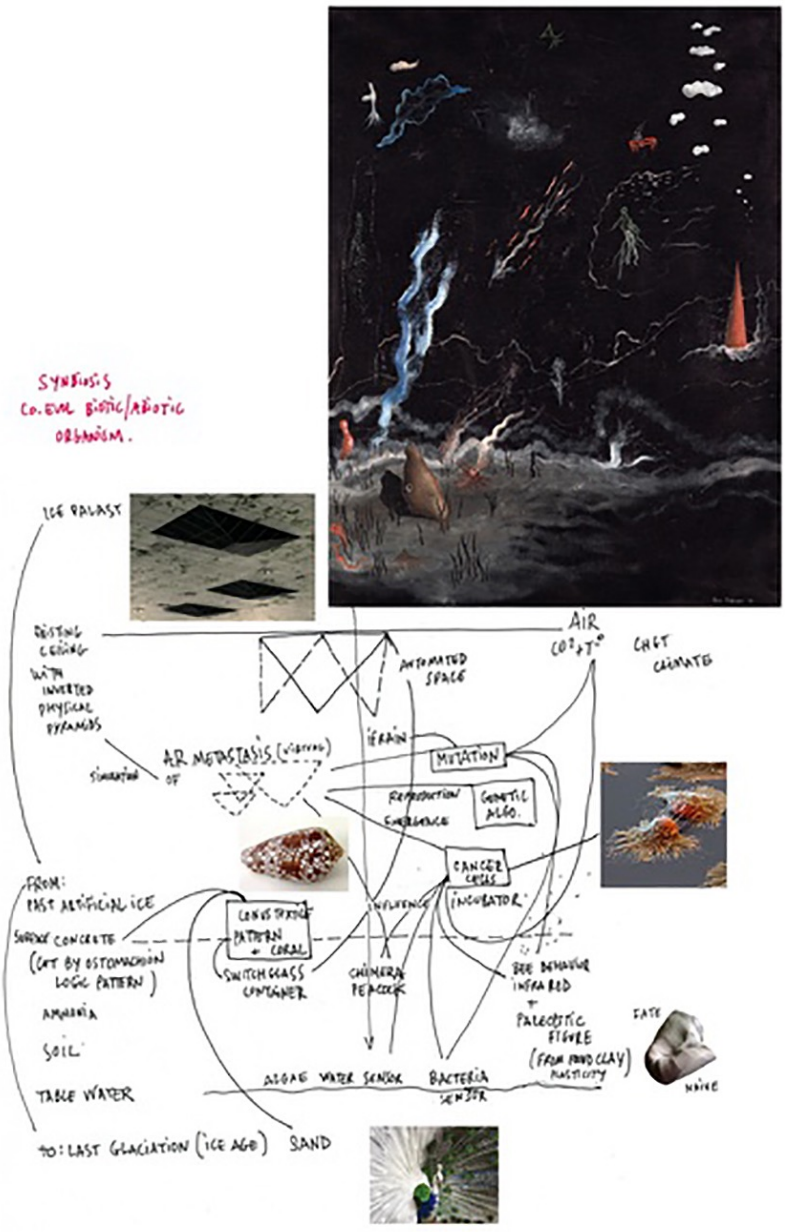

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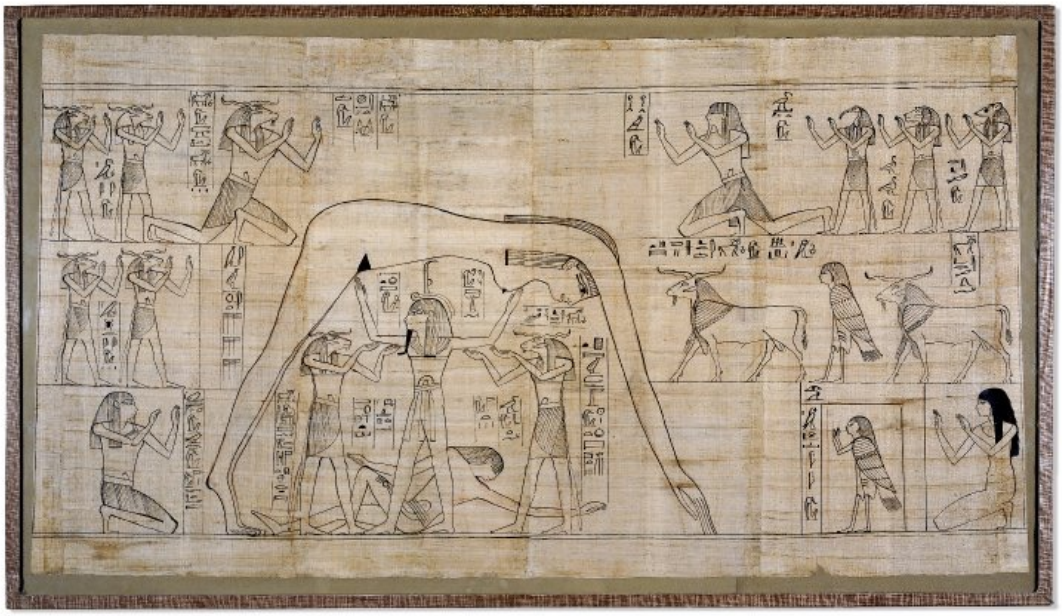

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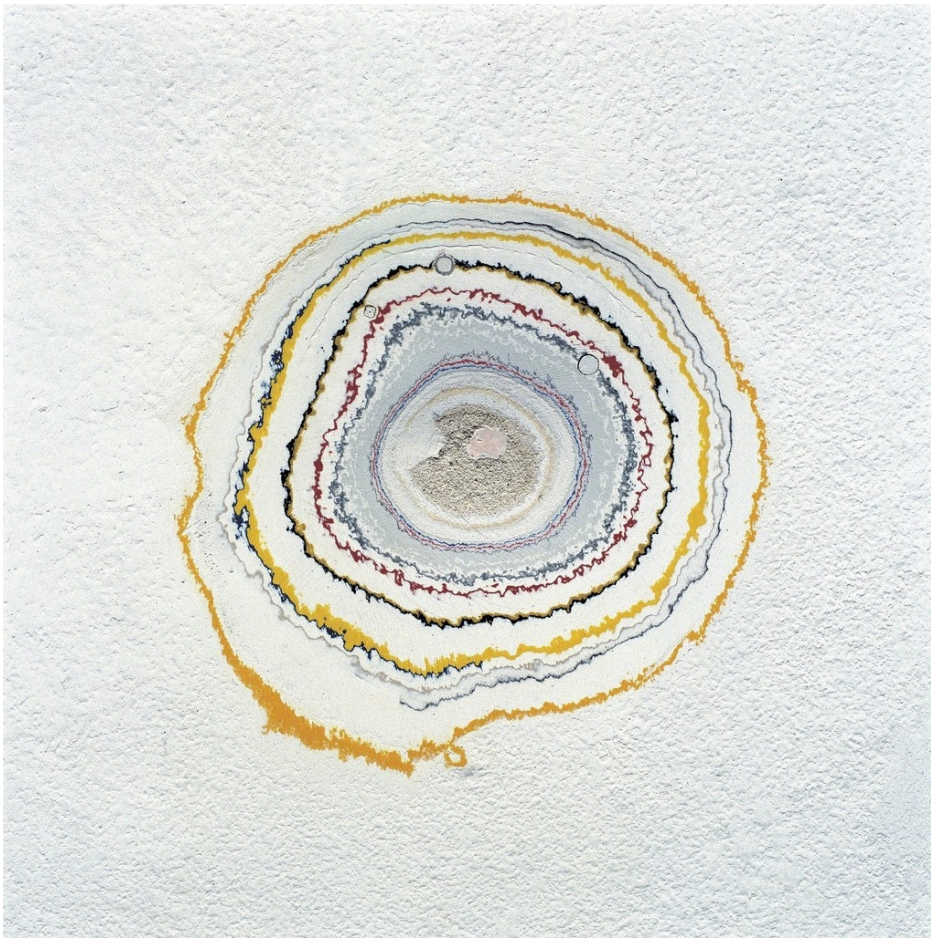

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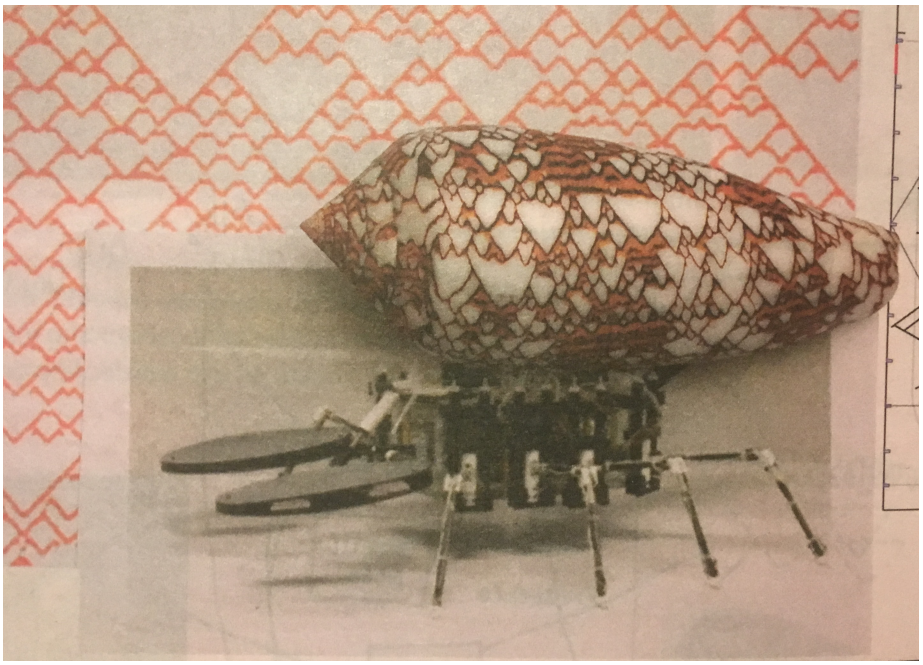

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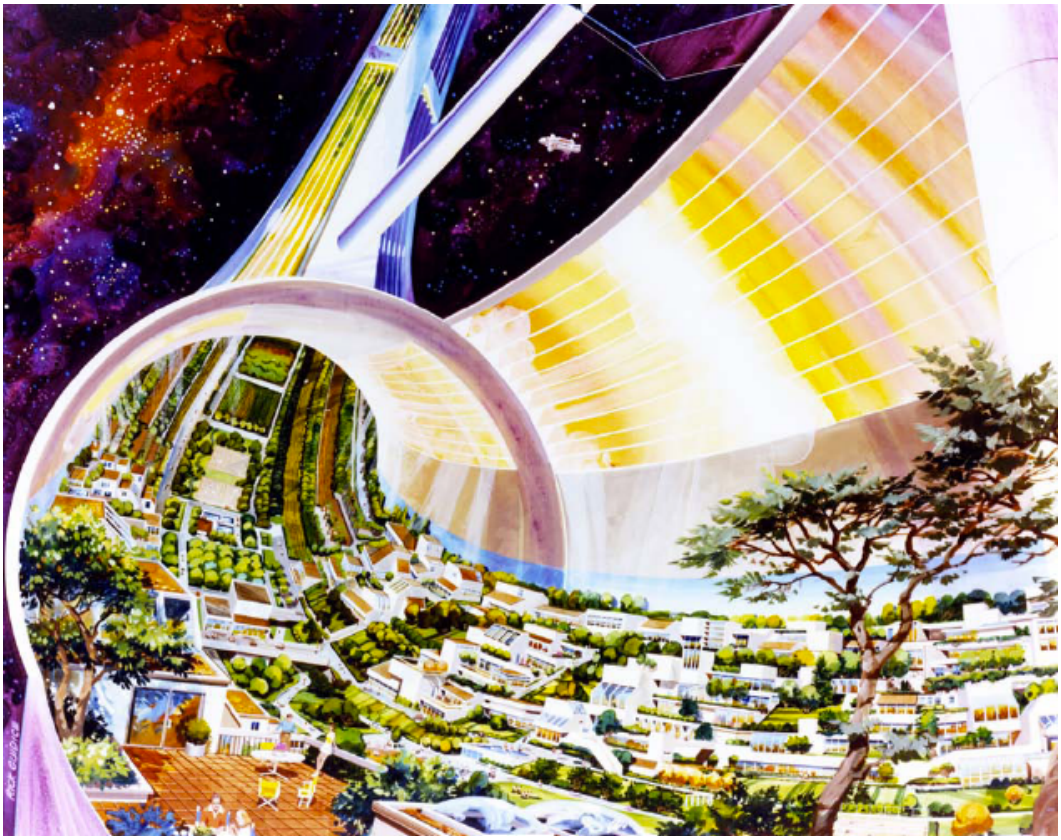

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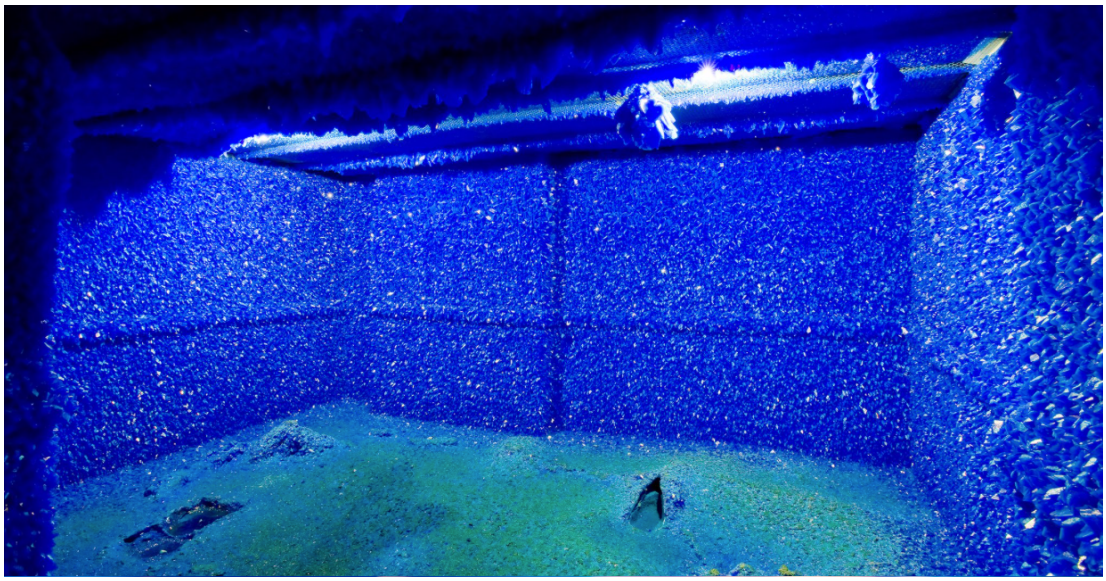

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7. Abstract (English)

This Master's thesis aims to point out the crucial role contemporary artistic practices play in mediating and combatting ecological crises and refers to *After ALife Ahead* by Pierre Huyghe from 2017 as a case study. The work can be interpreted as a post-apocalyptic scenario challenging the anthropocentric worldview through the deconstruction of binary oppositions such as nature and culture, human and non-human, and life and non-life. Deconstructing these binary oppositions also means to re-think the role of contemporary art in the entanglement thereof.

In this thesis, I argue that we need to re-evaluate age-old notions of nature, artificiality, hybridity, and life to establish new ethical values that are inclusive and appropriate for our contemporary issues of ecological disasters, exhaustion of resources, and ethical dealings with artificial life. In order to do so, I trace back to concepts from the environmental sciences, philosophy, and science fiction narratives while providing a relational analysis of *After ALife Ahead*. Since ecological problems affect us all, we need to practice relational and recursive thinking to fully understand the interconnectedness of human and non-human agents on the planet. Built on asynchronous chapters focusing on topics like site-specificity, ruins, or bio-power, this thesis can be read transversally to encourage intertwined interpretations of our role in recent natural disasters. Finally, I propose how post-apocalyptic thinking as demonstrated in *After ALife Ahead* can be appropriated to take action on an individual level.

8. Abstract (German)

Diese Masterarbeit soll auf die wegweisende Rolle zeitgenössischer künstlerischer Praktiken bei der Vermittlung und Bekämpfung von ökologischen Krisen hinweisen und zieht dafür *After ALife Ahead* von Pierre Huyghe aus dem Jahr 2017 als Fallbeispiel heran. Das Werk kann als ein postapokalyptisches Szenario interpretiert werden, welches das anthropozentrische Weltbild durch die Dekonstruktion binärer Oppositionen wie Natur und Kultur, Mensch und Nichtmensch, Leben und Nichtleben vor eine Herausforderung stellt. Die Dekonstruktion dieser binären Oppositionen geht Hand in Hand mit einem Neudenken der Rolle, die zeitgenössische Kunst in dieser Verstrickung spielt.

In dieser Arbeit argumentiere ich, dass wir überholte Vorstellungen von Natur, Künstlichkeit, Hybridität und Leben neu evaluieren müssen, um neue ethische Werte zu etablieren, die inklusiv und adäquat für aktuelle Probleme von ökologischen Katastrophen, der Erschöpfung natürlicher Ressourcen und dem ethischem Umgang mit künstlichem Leben sind. Zu diesem Zweck diskutiere ich Konzepte aus den Bereichen der Umweltwissenschaften, der Philosophie sowie Science Fiction und liefere eine relationale Analyse von *After ALife Ahead*. Da ökologische Probleme uns alle betreffen, müssen wir relationales und rekursives Denken üben, um die Vernetzung von menschlichen und nicht-menschlichen Akteur*innen auf dem Planeten vollständig zu verstehen. Basierend auf asynchronen Kapiteln, die sich auf Themen wie Ortsspezifität, Ruinen oder Biomacht konzentrieren, kann diese Arbeit quer gelesen werden, um miteinander verknüpfte Interpretationen von unserer Verantwortung bezüglich aktuellen Naturkatastrophen zu fördern. Abschließend schlage ich vor wie postapokalyptisches Denken wie es in *After ALife Ahead* demonstriert wird genutzt werden kann um Maßnahmen auf individueller Ebene in die Wege zu leiten.