

Terraformers for a New Atlantis

The Visual and Rethorical Representation of the
Anthropocene in Contemporary Architectural Design



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Summary:

Increasingly the ‘Anthropocene’ is entering the architect’s lexicon. The notion emerges as a challenge for architectural design, encouraging it to develop new discourses and practices. However, it is problematic that the Anthropocene is ‘read’ in various ways. This thesis inquires into the discourses on the Anthropocene that architects deploy in their work. Secondly, it investigates how these are incorporated into their designs as visual and narrative representations of the Anthropocene. It concludes that new roles for the architect are emerging with an emphasis on the creative imagination.

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Introduction:

“The great question is approaching: how shall the earth as a whole be governed?”

- Friedrich Nietzsche

The human species has radically transformed our planet. It has altered the composition of the Earth's atmosphere, the layout of its landscapes and the diversity of its flora and fauna. We are living in the age of the Anthropocene; a time in which human influence is so profound, it will leave a legacy we cannot erase. It is the result of a history tracing back to the enlightenment; for centuries, we are collectively engaged in reconstructing society to integrate processes of continuous advancement. We transfer knowledge from generation to generation; in doing so, we can build a better tomorrow.

At the dawn of Modernity, Francis Bacon had a vision of science creating “an empire of man over nature.” Western Enlightenment promised a more intensive use of the planet’s resources based on scientific principles. Today, we have undeniably arrived at a radicalization of the Baconian project to artificialize the environment. Humankind is manifesting the megalomaniac dream of engineering Earth into a New Atlantis, a utopia led by scientists (Hamilton 2015: 41). New Atlantis was one of the first visions of a perfect society that was successful in its conquest of nature. The Modern project promised our emancipation of Nature’s determinism; the scientific mastery of Nature by white men justified the ‘rational exploitation of the globe’ (Bonneuil 2015: 22). For most of history, the natural world was a *terra nullis* open for European elites to ransack. Vice versa, Frederic Jameson claimed that if “The modernisation process is complete, [then] nature is gone for good.”

Environmentalism emerged as Modernity’s other side of the coin; subsequently, we have typically understood environmental preservation as a battle between Nature and industry (Butman 2016). Today, we have reached a moment in time where endless advancement of technology and limitless energy production seems plausible. However, there is convincing evidence that we have arrived at Earth’s the point of saturation. Alarming news of late from the ecological front expresses critique on the modernisation project. Scientific warnings about approaching climate disasters become more pressing each day. In September 2014, UN scientist reported of the acceleration of climate change, claiming with near certainty that these developments are human-caused. Subsequently, they contest whether our future will be better or worse than today. As a species, we continue to dominate the planet, but our rule seems to be

fragile. In the face of environmental catastrophe, economic crises, and global pandemics, the faith in human progress has started to diminish.

The alarming amount of tell-tale signs about the environment has been able to generate public discourse; however, neither public nor political reactions come quickly enough. Actions are too feeble in their effect to meet the requirements indicated by the scientific community. We have ignored environmental problems for too long, and to this day a share of us are not entirely aware of the problems that ensue. It is most difficult to comprehend that environmental damage is irreversible and that resource depletion is real; moreover, cooperative measures are unlikely to develop by themselves in a world divided by economic, religious and political strife. But every day it becomes more evident that monopolizing Earth for its resources comes to the detriment of future generations. Have we been building our society on quicksand? What can we do, if anything, when politics fail to respond?

All these processes are brought together in the debates on the Anthropocene, a term from the geological glossary that indicates that we have arrived at a new phase in our global consciousness. The Anthropocene stems from the scientific debate on newly proposed nomenclature in the stratigraphic timescale. It not only does it make claims about the convergence of geological and human history, but it also presents us with rather apocalyptic prospects for the future. The Anthropocene has the potential to refute the project of Modernity and demands radical new ways of thinking about who we are and where we are heading.

The field of architecture can provide an answer to the problems issued by the Anthropocene. In the modern age, the architect's role in society was one of civic engagement. Modern architecture created a vision of society, in which humans were efficiently brought together as a collective. Architects always had a decisive role in these processes as they provide the building blocks for the dynamic reconfiguration of our environment. They have significant power in deciding what our environment will look like and how it will direct us in our future steps. It is through architecture that we reconstruct our surroundings; today, we are in dire need of a new world.

Today, our global community is in need of a revolution that architects can help spark. Architectural design is one of the societal domains that are assets in governing the planet as a whole. Creative design, therefore, holds promising prospects when it comes to encouraging change in the way we relate to Earth. Design practices have started to collaborate with environmental science, listening to their words of advice. How is the field of architectural design responding to the scientific developments regarding environmental change, notably the Anthropocene thesis? And how are we to re-address architectural creativity to become an asset in the path towards a better future again?

0.1 Research Question

The central question of this thesis is: “How is the notion of the Anthropocene represented in the work of architects 2000-present?” The architects or architectural duos I focussed my question on are Liam Young, Rachel Armstrong, and François Roche and Stéphanie Lavaux.

The former question is divided into three sub-questions. The first one is: “How is the notion of the Anthropocene represented as a narrative discourse in architectural production?” The second sub-question is: “How is the notion of the Anthropocene represented as a visual discourse in architectural production?” The third question is: “How do architects represent the discipline of architecture with regard to their understanding of the Anthropocene?”

I focussed my questions on the representation because the Anthropocene is interpreted by different disciplines in problematically different ways. By inquiring into the representation of the Anthropocene in architectural production, I have investigated the way that the discipline of architecture ‘reads’ the proposal of the Anthropocene. The Anthropocene is a complex and ambiguous scientific term, which results in a range of different connotations and interpretations in various fields. Because of the relationship between the notion of the Anthropocene with environmental policy and social action, interpreting the term in an adequate and critical way becomes paramount. Thus, representation has far-reaching consequences for its implications and the subsequent actions of architects.

0.2 Motivation and Legitimation

As a student in a Creative Industries program, I want to understand how society embeds creativity. As society changes, the functions of creativity transform along with it; this is especially true in the liminal moment presented by the Anthropocene. In writing this thesis I was interested in exploring new, unexpected areas for creativity to gain new meanings. Moreover, I wanted to understand the societal context of architectural creativity. My intention was to revise my understanding of the figure of the architect. In the process, my discourse on architecture changed, as I gained insight into how architects can develop new roles in society. Lastly, I wanted to make a contribution to the debates on the contemporary environmental crisis. I have long had an interest in architectural design; however, I am also part of a generation that is aware of the harmful effects of the modern urbanized environment on the planet. My personal ambition was to combine both interests and employ the designer’s creativity to direct humanity towards a more environmentally conscious lifestyle. My motivation was to evaluate how the discipline of architecture could contribute to better Anthropocene futures.

0.3 Terminology

The Anthropocene is neologism comprised of the old-Greek word *Anthropos*, meaning ‘human being’ and suffix *-cene*, derived from *Kainos* meaning ‘new in quality or development’ or ‘the recent now.’ Together the compound translates into a period in the geological timescale that is ‘newly human’. Atmospheric chemist Paul Crutzen popularized the term in the early 2000s; However, the word has been in circulation longer; it was used in Russian scientific research on the Quaternary period and Eugene Stoermer informally employed the term in his work before that with Crutzen.

One of the efforts of this thesis entails differentiating and problematizing the range of different ways how we interpret the Anthropocene in current debates. In some cases, we frame the Anthropocene as a geological event that is to be celebrated; in others we fear and lament it. Because there is more than one Anthropocene in circulation, it can be ‘read’ by the field of architecture in a range of different ways. Following the debates on the Anthropocene, I devised three different contexts in which the notion of the Anthropocene operates. These do not exist in separation from each other; however, I claim that they present distinctive ways of dealing with the notion of the Anthropocene. Firstly, there is the use of the Anthropocene as *geological science data*. The Anthropocene as a proposal in geological science and stratigraphy will henceforth be called the *Anthropocene thesis*. The relevance of the Anthropocene thesis is only minor to my research.

There is a range of other connotations of the Anthropocene, of which two are important in writing this thesis. There is the Anthropocene as a *cultural discourse* that frames anthropogenic environmental issues in society with an increasing sense of urgency and crisis. In this way it describes and legitimizes environmental destruction and anthropogenic impact; thus the Anthropocene is a story about humanity’s spiritual place on planet Earth. Discursive constructions of the Anthropocene function as a representation of the history and future of humankind acting as a singular agent (Chakrabarty 2009). These will henceforth be called *Anthropocene narrative(s)*. Lastly, there is the Anthropocene as a *visual experience of anthropogenic biosphere destruction*. The notion of the Anthropocene functions as a visual form of consensus about biosphere destruction, climate change, and related issues. What we understand as “the Anthropocene” is in many cases ambiguous and complex because it relates to the experience we have of being in an increasingly industrialized, urbanized and toxic environment (Tsing 2014; Mirzoeff 2014). This way of understanding the Anthropocene is important for this thesis because architecture is one of the biggest contributors to this experience.

0.4 Methodology

Architecture borders on a range of other disciplines, one of which is *storytelling*. Architectural design is constantly on the verge of becoming fiction. Bruce Sterling coined the term ‘architecture fiction’ in 2006, by which he suggested a change in the relationship between writing practices and architectural design. Sterling affirmed that architects write fiction, but moreover they can use buildings and building design to articulate possible, yet unrealized worlds. Sterling argued that the relationship between writing practices and building is becoming stronger with architects moving to the utopian edge of visionary architecture.

Based on the concept of architectural fiction, I employed Mieke Bal’s analytical methodology from a Narrative Theory perspective. Bal published *Narratology: Introduction to the Theory of Narrative* in 1985, in which she used structuralist concepts for the analysis of stories. She defined ‘stories’ broadly as “narratives, narrative texts, images, spectacles, and events, cultural artefacts that ‘tell a story’” (Bal 1985: 3). Bal was a pioneer in her claim that there is no reason to limit the scope of narratological analysis to texts only; notably, visual images can also be analyzed from a Narrative Theory standpoint. This is meaningful in how I constructed my framework to examine the narratives employed by the architects.

Bal stated that when we tell stories, we present *fabula* (material or abstractions) as a chronological sequence of events. The time frame in which the events have occurred represents the story; hence, a story represents the *experience of time*. Stories include actors with distinctive traits and relations among actors, events, and locations. Furthermore, we make a choice from various ‘points of view’ from which the experience of the chronological sequence of events is framed: “[...] events are always presented within a certain ‘vision’. A point of view is chosen, a certain way of seeing things, a certain angle, whether ‘real’ historical facts are concerned or fictitious events” (Bal 1985: 142). Perception, e.g., who ‘perceives’ or who is ‘perceived,’ depends on so many factors, that striving for objectivity is pointless. Focalization colors all stories with subjectivity (Bal 1985: 7-8). In visual images, focalization steers the interpretation of events represented in the visual. Focal points can tell stories through focalizing visual signifiers (lines and dots, light and dark, composition, et cetera) or through focalizing activities (pointing, moving, activities, et cetera)

I took the following from Bal’s methodology for my analytical framework to investigate narrative in architectural design”

- A narrative is the reconfiguration of *fabula* into events presented in chronological order.

- A narrative includes representations of actors with distinctive traits and relationships among actors.
- A narrative represents the subjective *experience of time* from a particular point of view. Thus stories are subjectively ‘colored’ by points of view.
- Narratives are also expressed visually, in which chosen focalizing activities or signifiers direct its interpretation.

I looked at narrative as a set of tools and as a means for creative expression for architects. In doing so, I approached both Anthropocene science and architectural design as narrative text. Taking both Bal’s analytical framework and Sterling’s notion of ‘architecture fiction’ into account, I comprised the following list of questions on the textual representation of the Anthropocene narrative in architectural design:

- What is time frame of the Anthropocene is presented in the work of the architect? What events does he/she represent in chronological order? What actors are present in the architect’s Anthropocene narrative?

By investigating the representations of the actors in the Anthropocene time frame, I replaced individual actors with larger meta-categories of actors who ‘act’ collectively. Anthropocene science builds on the notion of collective human agency. Thus the *Anthropos* is the protagonist in the Anthropocene storyline. Moreover, I conceptualized planet Earth as the antagonist in the narrative.

- How is Earth represented, as either as Nature or otherwise?
- How is the *Anthropos* represented? How does this relate to the notion of Technology?

Architects articulate these narratives visually. Hence I have investigated the composition and content of the architectural designs in response to the notion of the Anthropocene. From there I show how these enable access to wider ideologies or mythologies, notably through the concepts of Nature, technology, and the *Anthropos*.

My visual methodology, derived from Visual Culture theory, entailed the analysis of the composition and content of the architectural designs (Rose 2001). The compositional modality of an image draws on four formal strategies: content, color and light, and spatial organization. With video images, strategies include montage and sound. The content modality relies on content as semiotic resources to convey meaning about architecture and the Anthropocene. I devised categories to see how the content and composition accesses wider ideologies or referent systems. The questions on the visual depiction of Anthropocene narratives are:

- How are actors visually depicted in the content of the architectural descriptions and visuals regarding content and symbolic references?

- How are they depicted regarding color and light, composition and spatial organization?

Lastly, I have inquired into how architects reflect on the discipline, their practice and ethical obligations in light of Anthropocene debates. To a large extent, architectural design goes beyond crude architectural descriptions. Design projects also include stories about architecture. I investigated the hermeneutical spider web surrounding the discipline of architecture. This is what Jacques Derrida called the “architecture of architecture,” a historical chain of builders and buildings that constitute an *a priori* set of rules and thoughts about architectural design. Firstly, this entailed discourse analysis of the architects’ statements in interviews or other texts on Anthropocene architecture. These include statements about how design operates in society, or what functions it potentially could have in the future? Secondly, I related these to changing ways of seeing the world and the socio-political context of architectural production. Questions on the discipline of architecture in the discourse on the Anthropocene are:

- How is the practice legitimized regarding ethical responsibility? Does it promote ‘thinking forward’? Does the discourse pertain to the notion of ‘Speculative Design’ or Haraway’s concept of ‘Speculative Fabulation’?
- Who is the architectural design made for, regarding the human, multi-species or planetary responsibility? Does it pertain to Haraway’s practice of ‘Making Kin’?

From answering these questions I articulated conclusions about what visual and linguistic narratives on the Anthropocene are employed by architects Liam Young, Rachel Armstrong and duo François Roche and Stephanie Lavaux.

[0.5 Choice of Case Studies](#)

The case studies in this thesis consist of individual architects or a duo that represent responses in the discipline to Anthropocene discourses. They work in the spaces between architectural design, environmental science, and artistic production and are part of a larger movement of similar developments in the field. These architects appropriate the terminology from the Anthropocene thesis and give meaning to the notion. I inquired into symposia for architects on the topic of the Anthropocene, and from there I compiled a list of relevant professionals in the field who engage with the Anthropocene thesis.¹ Based on my analysis of these cases I formulated my statements on the significance of the architectural design in global environmental causes.

¹ The symposia I looked into were the following: “Facing the Future. On Architecture” the 2nd international Conference and Exhibition Gallery of Science and Technology on the 1-15th of September 2014 in Belgrade, Serbia¹; “The Geologic Turn. Architecture’s New Alliance”, curated by Etienne Turpin after the publication of *Architecture in the Anthropocene*; “Thrilling Wonder Stories: Speculative Futures for an Alternative Present”, Symposium co-ordinated by Liam Young and Geoff Manaugh (founder of the blog BLDGBLOG, on speculative architecture) at the AA School of Architecture in 2009.

0.6 Theoretical Framework

Here follows an introductory overview of the scientific, academic and cultural debates inspired by the notion of the Anthropocene. I do not intend to collect all positions; however, larger developments are outlined and represented by leading figures and notable publications.

During a conference in Mexico 2000, Nobel Prize-winning Atmospheric chemist Paul Crutzen proposed ‘the Anthropocene’ for naming the contemporary era on the geological timescale. Crutzen was unsatisfied with the inaccuracies of the designation of the ‘Holocene’: “I suddenly thought this was wrong. [...] The world has changed too much. So I said, ‘No we are in the Anthropocene.’ I just made the word up on the spur of the moment. But it seems to have stuck” (Macfarlane 2016). Crutzen elucidated the thesis together with freshwater-ecologist Eugene Stoermer in a paper published in *The International Geosphere-Biosphere Programme* and *Nature* in 2002 (Crutzen and Stoermer 2002). Subsequently, references started appearing in publications regarding biospheric research.

The scientific community went along with Crutzen and Stoermer’s proposal, which is now in the process of being submitted to the authorities on Stratigraphy. The *International Commission on Stratigraphy* controls the timescale, by dividing the Earth’s 4.5-billion-year history into various periods. The official adoption of the Anthropocene is considered by the *Working Group on the Anthropocene* (WGA), created in 2009. The WGA consists of 35 scientists, chaired by Prof. Jan Zalaziewicz of the University of Leicester. In August 2016 the WGA presented its official recommendation for the recognition of the Anthropocene to the International Geological Congress in Cape Town (The Guardian, 29 August 2016). Thirty of the members voted for the formal designation, two abstained. Now, further data is assembled and in the next few years, the authorities will investigate the WGA’s proposal. It is not yet a foregone conclusion; if they will agree with their recommendation, the *International Commission On Stratigraphy* will adopt the Anthropocene as the official successor of the Holocene.

Crutzen and Stoermer proposed the Anthropocene to indicate that we have exited the stable era of the Holocene, the period that geologists call the 10.000 to 12.000 years since the last interglacial period. Geologists are not yet sure of the formal time frame of the Anthropocene; Crutzen proposed the start of the industrial revolution in the 1800s, some indicate the development of agriculture 8.000 BC and others correlate it to the first atomic tests in the 1940s that left a permanent residual top-layer of radioactive isotopes on Earth. The effects of the Anthropocene are linked with industrialization, colonialism, or capitalism; however, their respective importance is disputed. The different claims regarding their priority make up for the differences in the proposed time frames. There are three views on the time of the Anthropocene (Baskin 2015: 12)

Firstly, there is the skeptic camp, not convinced of the usefulness or accuracy of the nomenclature. Secondly, the Agricultural or Early Anthropocene camp claims that it started with the onset of agriculture (Ruddiman 2015). This implies that there is nothing fundamentally new about our present-day situation because humans have influenced the natural world for thousands of years. Lastly, there is the Contemporary view that associates the beginning of the industrial revolution with the start of the Anthropocene (Crutzen and Stoermer 2000). They explicitly frame the Anthropocene as a problem, implying that we are crossing thresholds or 'planetary boundaries' rapidly since the 1950s. The contemporary dating coincides with the rise of consumer capitalism and expansion of global markets, otherwise known as 'market globalism', 'Late Capitalism', 'Neo-Liberalism', et cetera (Baskin 2015: 12).

As late as 2014, the word entered the Oxford English Dictionary – almost 15 years after the Mexico conference. However, the awareness of Anthropogenic impact is not new. Noel Castree claims that the Anthropocene is a new way to frame existing ideas, namely that of climate change (Castree 2004). Despite the slow pace of its institutionalization, the contemporary view of the term has developed into the second-most popular attempt to name Anthropogenic biosphere destruction, the most, of course, being climate change. However, climate change is a subset of anthropogenic influence. The Anthropocene is a continuation of past realizations about climate change, combined with increased urgency and an increased scale. Humankind's agency in the geological time frame is now much more profoundly recognized, which until recently highlighted only climate change and biodiversity loss. The Anthropocene has become a catch-for-all, covering the whole of human-made problems with an intensified sense of urgency. The term's synthetic quality is the reason behind its success because different ideas are easily brought under the heading of *the Age of the Human*.

Thus, despite the time frame is still contested there is consensus on the effects of the *Age of the Human*. The Anthropocene signifies multiple processes of human-caused planetary change. These include the rise of agriculture, deforestation, the extraction of coal, oil and gas, emissions of carbon-based fuels, ocean acidification, et cetera. Anthropogenic influence arguably became problematic in the year 1610 in the first phase of colonial expansion, causing cross-continental movement of species and the deforestation and population decline in the Americas. The second more severe phase, the "Great Acceleration", took place from the Second World War up to now (Zalaziewicz 2014). Increasing mobility and fast-growing world population characterized the second phase. The year 1945 is indicative of the period when a layer of radioactive particles was added to Earth's surface. This understanding of the Anthropocene is to end in an age of planetary stewardship and universal responsibility. Some claim we entered the final phase in 2015 with the Paris Climate Top

Now, the Anthropocene includes the prospect of losing seventy-five percent of the world's species in the next few centuries, the increase in atmospheric carbon dioxide, changing weather patterns and disturbing the planet's nitrogen cycles, the irreversible destruction of rainforest in the service of monoculture production, et cetera. Moreover, the speed of these impacts is accelerating, indicated by sea level rise and the moment of Peak Oil, which is said to have occurred back in 2008. New forecasts suggest that the Arctic will be free of ice in the summer of 2030 (Kerr 2009: 4). We are caught in an accelerated death spiral, with the year 2020 becoming the new 2100.

Because the notion drifted away from the formal consideration in the stratigraphic timescale, a growing share of Anthropocene debates has little to do with geological science. Rather the word has moved into debates concerning environmental policy. Crutzen claimed that the real value of the term was not to revise geology textbooks but to pose as a 'warning to the world' (Kolbert 2011). It has proven itself to be a very useful term to the research community on global change where it has already begun to exert its rhetorical force. The Anthropocene thesis is recognized, but also embraced, discredited or applied across a wide range of scientific, political and cultural contexts. Today, the concept has become a "catchword... in ascendancy" (Caro et al. 2011: 185), a buzzword extrapolated beyond the realm of geological science. The humanities and the social sciences have explored the concept of the Anthropocene and more recently the arts have started to engage with the thesis.

The idea of the Anthropocene had become a persuasive discourse that enables research opportunities and critical thinking. It provides a critical concept enabling to rethinking many things, notably the humanistic philosophical inheritance (Dalby 2015: 4). The theory assigns human agency the same strength as natural forces. Steffen claims that the "human imprint on the global environment has now become so large and active that it rivals some of the great forces of Nature in its impact on the functioning of the Earth System" (Steffen et al. 2011). The thesis recognizes the *aggregate effect of human beings as a geological force*, which becomes a measurable geological factor in the Earth's history. However, despite the collective effect, humans are not fully in control of the forces they exude.

Because of the way the Anthropocene frames humanity through the lens of politico-environmental issues, it is picked up by Humanities research. The Anthropocene merges the notion of human and natural history and claims that both are inextricably connected. It functions as a call to "re-imagine the human through biology and geology [...] because it places our industrialized present within a time frame that is at once evolutionary and geologic" (Davis and Turpin, 2015: 6). Because the humanities have long relied on humanistic principles, they are at

unease with their deconstruction. Historians and cultural theorists are responding to the implications of the term for their respective fields.

In popular culture and the arts, it is already widely accepted as the current geological state because of the aesthetic experience of living in modernized urban surroundings. Being in the Anthropocene means living in an increasingly artificial, crowded and changing biosphere (Rockström and Klum 2015). The idea of the end of humanity, a post-Anthropocene, has sparked the imagination of the arts and is translated into making predictions for future developments. Heather Davis and Etienne Turpin argue that the “Anthropocene is primarily a sensorial phenomenon: the experience of living in an increasingly diminished and toxic world.” The notion of the Anthropocene represents the realization of “living on a damaged planet” (Tsing 2014). Nicholas Mirzoeff sees the Anthropocene as a way of aestheticizing a damaged planet into a romanticized ruin. He, therefore, calls the Anthropocene an *anti-aesthetics*, as a frame of reference that redirects perception and experiences: “Anthropocene visuality allows us to move on, to see nothing and keep circulating commodities, despite the destruction of the biosphere. [...] In short, Anthropocene visuality keeps us believing that somehow the war against nature that Western Society has been waging for centuries is not only right; it is beautiful and it can be won” (Mirzoeff 2014: 217). Culture can provide a site for experimentation for dealing with the realization of a disappearing natural environment; moreover, it can provide tools to stay creative in the Anthropocene.

[**0.7 Outline of the thesis**](#)

I organized this thesis as followed. The first chapter ‘Architecture in the Anthropocene’ shows the ways that discipline of Architecture has already begun to ‘deal’ with the notion of the Anthropocene. The second chapter goes into the Anthropocene as the result of a practice of storytelling and sets forth the existing narratives of the Anthropocene circulating debates. The Anthropocene is not singular, but it is used in several different contexts and is assigned multiple and divergent meanings. In the third chapter, I argue that we are in need of new stories on the Anthropocene for it to have a more desirable outcome. My way of *looking forward in the Anthropocene* is based on critical work the work of Joanna Zylinska and Donna Haraway. Chapter four explores three case studies of contemporary architectural production in response to Anthropocene discourses.

Chapter five sets forth with the analysis of the information gathered from the case studies. Firstly, I gathered the narratives that architects employ on the Anthropocene. Secondly, I inquired into how they visualize these narratives in their work. Lastly, I analyzed the discourse of architects on Architecture in the Anthropocene. Architects define their titles differently and choose various

ways to intervene in the socio-political context, thereby re-positing themselves in the fields of environmental science and activism. I conclude with a summary of the research findings, my conclusions, and some critical reflections.

0.8 Title and Cover image

The title of this thesis, “Terraformers of the New Atlantis,” refers to an incomplete utopian novel by Sir Francis Bacon, published in 1627. ‘The New Atlantis’ depicted a mythical island-utopia, Bensalem. Bacon portrayed an ideal vision of the future of human knowledge, expressing his aspirations for society. Bacon’s purpose was to replace the human quest for the search of the “heavenly city”, with a secular creation of a well-governed country founded on scientific inquiry (White 1968). Nowadays, we too are in need of adequate government.

The scientific debates on the Anthropocene ask to reform and let go of dated conceptions about Nature. Terraforming is the fictitious practice of creating a hospitable atmosphere for human life on other planets. Our damaged and increasingly toxic planet is becoming inhospitable; human activity has altered the state of the biosphere, creating a new Earth. We have and will in the future, re-create the world on a planetary scale. Only then are we able to create a hospitable New Atlantis.

Following the example of feminist scholar Donna Haraway, the image on the cover is a reference to the patron critter of my research endeavors. The leaf-cutter ant *Atta Laevigata*, my chosen companion species, is the most highly developed insect-agriculturalist known today. The million of worker ants of the *Atta Laevigata* species forage across many acres and grow fungus gardens; they collect leaves in their nests on which they grow edible fungus to provide sustenance for the queen and larvae. Scientists were able to determine that fungus-growing ants all descended from a common ancestor that pioneered fungus farming 50 million years ago during a period of global warming; these ants represent the world’s first known farmers. For our own agricultural production, leafcutter ants can be a serious pest, defoliating crops and damaging farmland and roads with their nest-making activities. For most, human agriculture represents the beginning of our planet-changing presence on earth. It is the most revolutionary enterprise in history, which eventually led up to the Anthropocene.

Chapter 1: Architecture and the Anthropocene

“Architecture is the will of an epoch translated into space.”

- Ludwig Mies van der Rohe

In the first chapter, I outline the ways that the discipline of architecture has already made the first steps towards integrating the notion of the Anthropocene. I begin with designating how Anthropocene narratives are deeply cultural discourses. The Anthropocene is a metaphor or storyline, which encompasses all of human history. In what follows I present an overview of how the notion of the Anthropocene has already begun to influence the discipline of architecture. Inevitably, architectural design is subjected as well to the potentially critical discourses resulting from the notion of the Anthropocene. Furthermore, in the rhetorical construction of the Anthropocene, the discipline of architecture plays a significant role.

1.1 The Anthropocene as Rhetoric

As much as the Anthropocene is a biophysical reality, it is also a metaphor. The rhetoric reflects metanarratives on humanity’s place in the world. Because of its rhetorical force, the notion of the Anthropocene moved into areas beyond the geographical discipline where it originated. The idea of *humans as geological force* is thought-provoking and can encourage different interpretations and can bring together several narratives about our history.

Lauren A. Rickards, an interdisciplinary researcher with a background in human geography, analyzes the ‘symbolic charge’ of the Anthropocene. She looks at the metaphors that lie beneath the surface of Anthropocene thinking. She concludes that the Anthropocene is a deeply cultural phenomenon; it delves from a broad dynamic cultural imaginary (Rickards 2015:1). It is, therefore, as much about the imagination as it is about scientific practices or institutions. How we imagine the existence of the Anthropocene is important for the future of the planet. To see “what is wrapped up in the idea,” she elucidates the rhetorical tropes and theological themes in the rhetoric of the Anthropocene.

Moreover, Rickards states that the meaning of any given metaphor is deeply ambiguous and can be read in various ways. The Anthropocene as metaphor structures our understanding of the world. It illuminates some aspects of or perspectives on the world, and the independent readings shape our subsequent actions. What the Anthropocene does for example is refocus our understanding of Nature towards the viewpoint of an entire planet. It is not only a matter of how accurately it depicts the planet, but also which insights, storylines, emotions and aesthetics it provides (Rickards 2015: 2). Thus, there are different ways of framing the Anthropocene. The

framing of the Anthropocene firstly equates to global environmental change. A second framing relates to it having ‘exploded’ the modernist human-nature binary that underpins global environmental change (Rickards 2015: 4).

Variations in the understanding of the Anthropocene emerge depending on how the key concepts, words like the ‘Anthropos’, ‘Nature’ or ‘Geological’, are understood (Rickards 2015: 4). This results in three basic understandings of the metaphor:

- As a series of empirical facts, relying on metaphors for its rhetorical explanation.
- As an observation about the contemporary period and as a universal truth about the current condition of the planet.
- As a statement about the cosmological significance of humans in the historical development of planet Earth.

[**1.2 Architects in the Anthropocene**](#)

In the metaphorical construction of the Anthropocene, architecture plays a significant role. Architects have a degree of responsibility for anthropogenic destruction, as well as being the profession that can provide solutions. Elizabeth Grosz states: “Architecture [...] has the capacity to both extend human’s destruction of the environment, but also, at its best but much more rarely, it retains the capacity to invent new modes of co-existence, more sustainable ways of living and more aesthetic experiences of inhabitation” (Grosz 2001: 53). In short, architects can offer resilience and sustainability, thereby aiding current affairs. Secondly, it refers to the way that humans, in general, have become the *architects of the planet* (Korody 29 September 2014). Architecture can thus be understood as a synecdoche for the Anthropocene, which provides an accessible entryway into thinking of the Anthropocene. Moreover, the field of architecture makes a large contribution to the degree that humans intervene in the geological time.

Anthropocene discourses and architecture are forming strong bonds. However, the far-reaching implications of thinking in terms of the Anthropocene make this a challenging and treacherous endeavor. Design theorist Etienne Turpin articulates one of the main challenges of the Anthropocene for the field of architecture, as a problem of scale. In *Architecture in the Anthropocene* Turpin asks:

“How might architecture encounter this multi-disciplinary, multi-scalar, and multi-centered reality? This question is the core concern of this book. It is my conviction that by discovering affinities and alliances with both the sciences and the theoretical humanities, architecture as a practice can begin to reassess its privilege, priorities, and capacities for inscription within the archive of deep time” (Turpin 2013: 5).

The Anthropocene is influencing the discipline of architecture in the following ways.

1.3 The Anthropocene's radical potential: the stratigraphic gaze

The Anthropocene promotes a particular perspective, which influences the field of architecture in interesting ways. Firstly, this is related to the ‘stratigraphic gaze’ (Rickards 2015: 4; Zalasiewicz, 2013). The Anthropocene requires that we imagine ourselves as inhabitants not only of a sequence of human generations but as part of *deep time*. *Deep time* refers to the timespan of consecutive eras of the geologic development of the earth’s composition. James Hutton coined the concept of deep time in the eighteenth century. He conceptualized Earth as a composition of an immense past with cycles of formation and destruction, which are still observable today. He developed his theory from his observations of slow transformation that leave behind traces of time in the Earth’s layers. He argued that soil erosion, pressures from the ocean and subterranean heat created the rock layers that make up geological time, instead of a divine creator. He controversially claimed it was “vain to look for anything higher in the origin of the Earth” (Hutton, 1788).

Hutton’s theory suggested that the Earth is a living ‘Earth System’, in the continuous process of creation that changes the composition of its constituent parts. Architectural theorist Elizabeth Grosz in an interview with Heather Davis and Etienne Turpin explained:

“So deep time, the time of the universe’s unfolding, the construction of the Earth and all that appears on it, the eruption of life forms, all the momentous and unpredictable emergences never cease; they function both as a historical horizon but also as unspent forces, forces whose effects have not been used up by all the time that has separated the present from its primordial past” (Grosz 2012).

Now the discipline of Stratigraphy is the authority on the course of deep time. However, the concept of deep time is becoming operative in other fields than stratigraphy as well.

The stratigraphic gaze of the Anthropocene re-constitutes architecture as a ‘geologically durable mass of brick, concrete, glass and metal’ (Zalasiewicz 2013). The practice of building means inscribing oneself into the geological record of the planet, which literally reshapes the Earth. A building stands on geology (i.e., its foundations), is composed of geology (i.e., materials), and reorders geology (i.e., terracing) (Korody 29 September 2014). Thus, the stratigraphic gaze positions humans as geological objects in *deep time*, which is leading to a radically new way of looking at architecture. This leads to the realization of the entanglement of human and geological

time, thereby problematizing its former divide. The Anthropocene's new cosmology resituates us in deep time, enabling greater identification between humankind and the natural world (Northcott 2015: 102). The discipline of architecture is a significant actor in geological transformation. Landscapes are transformed through naturally occurring processes and human interventions; architectural endeavors are based on increasing the longevity of formations or buildings. The built landscape becomes the physical inscription of architecture into deep time. The highlighted interconnectedness of deep time and design is where the notion of the Anthropocene has the most potential for architectural production.

Moreover, by providing architects a viewpoint based on the spherical horizon of the planet, the Anthropocene demands to see humans *acting as a single agent*. Anthropocene architecture, therefore, builds towards an inclusive society, against social inequality, nationalism, racism, et cetera. It thus can be stated that architects produce the spherical horizon of the Anthropocene. John Palmesino states: "At least since the fourteenth century, architecture has produced the possibility of understanding horizons, vanishing points, and of setting views and view heights. [...] Architecture is not buildings; buildings are mainly stuff. Architecture is an active connection, a practice which activates a relation between material spaces and their inhabitation; and, it structures that relation, it structures what we call the relation between space and policy, as well as the construction of policies themselves" (Turpin 2013: 16).

However, due to the complex and multi-faceted notion of the Anthropocene, not all its consequences promote the development of constructive and sustainable solutions to its problems. It has led to the following unintended implications in the discipline of architecture.

1.4 Unintended Consequences: the Anthropocene veil

The Anthropocene can invoke the idea that *Homo sapiens* is at the juncture of burgeoning into an exceptionally strong and unique relationship to the planet. This legitimizes interventions on a planetary scale, such as climate- or geoengineering. The Idea of Humans as telluric force can underscore to the notion that humans are 'the god species.' According to Mark Lynas: "Nature no longer runs the Earth. We do. It is our choice what happens here" (Lynas 2011: 8). Thus, on the one hand having the planet as a design horizon leads to the dissolution of scale and the aggrandizement of architects as 'terraformers'. It, therefore, positions architects as 'stewards' of the planet and envisions the Earth as a vast garden-city (Clarck 2015: 5). Crutzen stated:

"[The] daunting task lies ahead for scientists and engineers to guide society towards environmentally sustainable management during the era of the Anthropocene. This will require appropriate human behavior at all scales, and may well involve internationally

accepted, large-scale geoengineering projects, for instance, to ‘optimize’ [the] climate” (Crutzen 2002: 23).

As a necessary response to a state of crisis and emergency, it legitimizes the instrumental and uninhibited use of technology. Often this results in largely non-democratic and technophilic solutions (Baskin 2015: 11). Concerning architectural production, this leads to developments like the Eco-Modernist movement, epitomized by the Breakthrough Institute. Eco-Modernists describe the Anthropocene as a new moment in evolution in which human beings naturally take over the steering wheel in history. The growing scale on which humanity operates is merely the next step in human *and* natural development. Hence, the Anthropocene generates an uncritical embrace of human intervention, often through high-tech solutions.

More widespread are pervading sustainability discourses in reaction to the notion of the Anthropocene. As a self-affirming and non-critical outcome, it is leading to a discourse in design of sustainability and resilience. The notion of sustainability is having powerful effects on the field of architecture (Owen 2015); it has come to justify a range of current actions in the name of sustainability, however, it often does not live up to its promises. The imperative of sustainability now pervades almost every aspects of architectural discourse. It has become a powerful marketing tool able to promote production and consumption.

As a form of green consumption, sustainable architecture claims to reduce the industry’s environmental impact. However, defining ‘green architecture’ is a notoriously difficult task. Moreover, there is an increasing body of work critiquing green consumption from a Marxist perspective (Scales 2014). By seemingly empowering consumers through informed choice, green consumerism tends to green-wash more fundamental problems about the exploitation and depletion of resources. In actuality, ‘green architecture’ remains uncritical of current affairs, thereby affirming existing power structures in the industry.

Sustainability does not seem to capture the symbolic charge and urgency of the Anthropocene, nor does it offer adequate solutions to the problems we’re facing. These discourses in the creative design do not capture the massive scale of the Anthropocene. Thus, in sustainability or ‘green’ discourses, the Anthropocene loses most of its radical potential. For it to be truly sustainable and efficient, creative design’s engagement with environmental science must move beyond the thin veil of sustainability

Concluding remarks

Concluding this chapter, I claim that Anthropocene discourses do not necessarily lead to a better architecture. Historically, there are similarities in the way that the field of architecture

handled critical theory in the past. Manfredo Tafuri claimed in *Architecture and Utopia* (1976) that semiology and structuralism functioned as a ‘delicate ideological veil’; the integration of critical theory in architectural language disguised the deeper penetration of capitalist logic into production processes (Crysler, Cairns, and Heynen 2013). Hence, making a critical stance in architecture remains difficult. The sustainability discourse is an example of the improbability of architects to change. There is a degree of stasis in the discipline; because of the current social-economic conditions, it remains impotent from maintaining a critical discourse (Slenka 2013: 11).

It is possible to take the Anthropocene for a false signifier that humans are in control of the planet, and can stop it spinning out of control (Anderson 2015: 340). Practices resulting from the adoption of the Anthropocene, like geoengineering or sustainability discourses, are inadequate to resolve the issues of our time. More often these exacerbate the problems. I, therefore, claim that we need a more critical way of looking at the Anthropocene to adopt a constructive relationship between the notion and the discipline of architecture. How we frame Anthropocene matters greatly, for different ways of framing lead to different results. How is architecture to align with Anthropocene science, without reducing its issues to easy-fix solutions? The following chapter continues with the deconstruction of Anthropocene discourses to find satisfactory ways of framing (and subsequently dealing with) the Anthropocene in architecture.

Chapter 2: The Anthropocene as a practice of storytelling

“The human species thinks in metaphors and learns through stories.”

- Mary Catherine Bateson

Our understanding of the Anthropocene results from a practice of storytelling and it is through the storylines on the Anthropocene that we can learn the potential lessons inspired by the notion. It represents a ‘grand tale’ about humanity and its place on earth, in past and future tense. There are different ways of constructing the Anthropocene narrative; the different stories equate to different sentiments and ideologies. Each understanding of the Anthropocene frames the era differently, thereby giving it distinctive characteristics and a specific storyline with various outcomes.

What we understand as “the Anthropocene” is delved from a broad range of cultural repositories; from these, the notion obtains its profound meanings and cultural impacts. There are several ‘pockets of meaning’ folded into the rhetoric, contributing to its symbolic charge (Rickards 2015). Thus, the “Anthropocene” is text(s) with various intertextual references. It echoes the world’s secular and colonial history, the historical influence of humanist philosophy and other binary systems of thinking.

Before looking at how the discipline of architecture can understand the notion of the Anthropocene as a normative guide to action, I first distinguish the different meanings of the Anthropocene. In this chapter, I outline the multiple ways of framing it. The stories we tell about the planet matter for the Earth because they guide future actions. A better way of framing can enable it to have better effects while remaining critical of technology, science, and consumerism. Today, we are in need of new stories to bring about a better way of working towards the future.

2.1 The Anthropocene as Grand Narrative(s)

The Anthropocene proposes a *grand tale*, built from a variety of stories on humanity’s existence on Earth. It represents an attempt for a totalizing scientific framework in which Earth’s processes, life, and human enterprise are brought together in one geological history (Hamilton 2015: 2). This is a provocative stance because the humanities in the post-modern era have been defined by “incredulity towards metanarratives” (Lyotard 1979: xxiv). Decades after Jean-François Lyotard’s proclamation it is still relevant to be suspicious of the stories, whether their subject is Western progress or anthropogenic planetary change.

Firstly, it is important to stay critical because the metaphor of the Anthropocene relates to ways of framing our historical presence on earth. We frame it as a story and framing matters; it

organizes thought, facilitates forms of identity or conduct (Goffman 1974). Anthropocene narratives tell about the history of human kind and the planetary transformations that it is causing. Anticipating these changes requires geopolitical intervention. Thus, how the Anthropocene is framed matters politically and environmentally because these stories inform the policies regarding the anticipation of planetary change. Understanding it raises fundamental questions about world politics; therefore, the Anthropocene has become a highly contentious term. It has become a lightning rod for political and philosophical arguments about what we need to do (Dalby 2015: 2).

Secondly, the notion is appropriated by different disciplines in problematically different ways (Semal 2012: 87). Because of the initial lack of stable consensus about the term in scientific debates, there have emerged numerous interpretations of the notion. Its conceptual tensions encouraged variant readings, ranging from sentiments like melancholy, conservational responsibility or the need for intervention.

Thirdly, with its fast rise critique of the notion has also increased. However, because of its multiple meanings, it can be unclear which Anthropocene is addressed. Some claim that speaking of a generalized *Anthropos* is an ideological illusion and that celebrating the *Anthropos* or technology as the drivers behind history can open up doors for further exploitation (Macfarlane 2016). The rhetoric of Anthropocene science has been accused of being self-aggrandizing and narcissist. These critiques are correct and relevant; however, they do not apply to *all* discourses that emerged after the first appearance of the notion. Inquiring into what is meant when one speaks of the Anthropocene is, therefore, of the utmost important.

The conceptual tensions result in Anthropocene discourses that are susceptive to the inscription of ideology. Ideology is a system that seeks to explain the external world to a person, through a framework of assumed beliefs (Adams 1993). Different visions on the Anthropocene underwrite different political arrangements, and its adherents attach powerful normative components to the notion.

2.2 Four Anthropocene narratives

Historian Dipesh Chakrabarty was one of the first to call upon the humanities to critically study the Anthropocene. He took one of the first steps towards problematizing the notion and neutralizing its ideological assumptions in his paper “The Climate of History. Four Thesis (2009).

Chakrabarty investigated the semiology of the *Anthropos*, thereby problematizing our way of speaking of humans’ virtual collective entity. His claim included that there is a range of histories of the Anthropocene circulating in society, which includes the triumphalist discourse of European progress and the non-Western perspectives of subjugated peoples. Chakrabarty claimed that the

Anthropocene is not a neutral geophilosophical discourse; on the contrary, the single geochronological story of our planet needs to be decolonized and secularized. Arguably, we need more than one Anthropocene; a creative tension between the first discourse and that of the multiple narratives of colonialized people is necessary to involve the *Anthropos* as a whole.

Chakrabarty pointed out the unjust assumption of a single *Anthropos* because agency and vulnerability are spread unequally among humans. The harmful effects of the Anthropocene will affect different areas of the world to varying degrees. The planet is not only shaped by the rich and powerful, but developing countries are most vulnerable to receive the blows of an out of control environment. The Anthropocene presents us with a vision of a human collective, visualizing humanity as a commonality despite the fact that human agency and vulnerability are asymmetrically divided across gender, class, race and ability. Thus, the Anthropocene normalizes a part of humanity as *the human*.

Further elucidation of all tropes in Anthropocene narratives, can help see how the notion functions in society. According to historian Christophe Bonneuil, there are four grand narratives of the Anthropocene: the naturalist narrative; the post-nature narrative; the Eco-Catastrophist narrative; and the Eco-Marxist narrative. These four narratives (although there are arguably more in existence) propose different beginnings and endings, various potential durations and degrees of agency humans are endowed with. All of the projected Anthropocene scenarios reveal perilous path dependencies. These paths include on-going economic growth, fuelled by a lifestyle that demands consumption of finite resources (Jackson 2009). To avoid disaster, we need to break the trajectory of these paths on a global scale (Rockström et al. 2011; Mórrígan 2010; Edeholt 2012).

The following section delves into how scholars have deconstructed the narratives of the Anthropocene. To understand the novelty, ambiguities, and potentialities of the Anthropocene we need a more broad understanding of “what is wrapped up in the idea” (Rickards 2015: 1).

[2.2.1 Naturalist narrative](#)

The *naturalist narrative* is the storyline proposed by most geological scientists. Notable social theorists like Ulrich Beck and Anthony Giddens also yield the progressive storyline. It involves the front-staging of the *Anthropos*, as the most important force changing Earth. It explains new environmental consciousness through the development of Earth Monitoring Science: “We are the first generation with the knowledge of how our activities influence the Earth System” (Steffen et al. 2011: 749). Moreover, the naturalist narrative erases civil society and politics as the domain of environmental solutions; it celebrates scientists as the safe keepers of our species, staging science as detached from the cultural-political-economic knot that produced the Anthropocene

(Bonneuil 2015: 19). Its ‘anti-politics’ approach makes it naturally fitting into the neoliberal discourse.

According to Rickards, the Anthropocene is rooted in Christian theology about *Humans as stewards*. The idea of *people as geological force* is based on a narrative of recovery and Western progress, a reformulation of the Judeo-Christian story of the expulsion from the Garden of Eden and the restoration of our position as God’s chosen ones (Merchant 2003). The first narrative tends to reproduce the ideas of civilization and Modernity – of man equalling Nature (Bonneuil 2015: 23). Despite the reality of environmental devastation, the idea that we are now the equivalent of great forces of nature can easily be twisted into tales of human exceptionalism.

2.2.2 Post-Nature narrative

The second Post-Nature narrative heralds the *end of Nature*. A network of post-modern critics, eco-constructivist, techno-utopian thinkers, et cetera, promotes this way of looking at the Anthropocene. The Post-Nature proponents argue that the world is better off without Nature; this, subsequently, can lead to a ‘good Anthropocene’ (Bonneuil 2015: 24). They describe a world in which the division between politics and the natural world has collapsed, which can result in effective policies regarding environmental issues. Optimism regarding the Anthropocene was initially suggested by ecologist Erle Ellis (2011). The optimistic camp argues that a thriving future for humanity is still possible with the necessary lifestyle alterations. By focussing on what is right about the Anthropocene we recognize that every day numerous possibilities are opening up and that each continuous phase in the development of Earth is shaped through technology (Dalby 2015: 12).

Because it opts to let go of the concept of Nature, the post-nature narrative abandons the worldview inherited by Western Modernity. Ted Nordhaus and Michael Shellenberger, founders of the Eco-Modernism movement and authors of the book *Breakthrough: From the Death of Environmentalism to the Politics of Possibility* (2007), claim:

“We often talk about the Anthropocene as a new geological era, the point at which humans have become the greatest ecological force on the planet. But the Anthropocene is as much a metaphor as a biophysical reality. It reflects not only our influence upon the ecological systems of the planet but also our liberation from ‘Nature’” (Nordhaus and Shellenberger 2012: 2).

They celebrate the disappearance of the separation between nature and society. The distinction between ‘human’ and ‘nature’ is replaced by hybrid ontology, requiring extensive reviewing of

both concepts. Now, we are at the tipping point of the establishment of ‘society-nature’ hybrids leaving no all-natural remainder in its course. Humans produce Nature on a planetary scale. New species that emerge in urban environments suggest that emerging artificial ecosystems replace Nature. We are at the tipping point of the world fully becoming a human-dominated habitat. Moreover, today’s issues are the result of a displaced trajectory of *natural* evolution. Toxicity is causing the paradigm shift towards Anthropocene territories, moving away from mythical natures. “Notably since the Industrial Revolution, toxicity has become a ‘natural’ part of our environment; to the point that “for the first time in the history of the world, every human being is now subjected to contact with dangerous chemicals, from the moment of conception until death” (Lawrence 1998: 648). Nature has become perverse, and it is turning against us; this is clashing with our understanding of Nature, as something harmonious and wholesome. Thus, we have to come to terms with living ‘after nature’ (Wapner 2010: 2014).

Paradoxically, it reconstitutes the spirit of Modernity by promoting the acceleration and intensification of the Modern project (Bonneuil 2015: 26). The narrative recalls the Modern idea of the emancipation from Nature through societal advancement and imperialist narratives about conquering Nature. It looks for solutions to reassert human dominance over the planet and opts to let go of irrational fears of technological advancement and its harmful side-effects, normalizing the technological risks as a natural part of the human condition: “What we call ‘saving the Earth; will in practice, require creating and recreating it again and again for as long as humans inhabit it” (Shellenberger and Nordhaus 2011: 9-10). Erasing these fixed boundaries can help us move forward; however, this makes the post-nature narrative another avatar for the grand-tale of Western progress (Fressoz 2007).

The Post-Nature narrative is related to the field of ecocritical theory. Ecocritical theorists focus on the construction of Nature and the environment in literary texts. Where the first generation was concerned with the notion of Nature in fiction, the twenty-first-century work focuses on today’s discourses on environmental issues (Hiltner 2015: 131). Second-wave ecocritical science claims that Nature and the *Anthropos* are historically and culturally dependent; this problematizes the claim to universality of Anthropocene science. An ecocritical approach to the Anthropocene entails close reading of the proposed narrative to see what we understand as Nature. Our perception of Nature has dramatically changed over the last centuries, and the Anthropocene accelerates this even further.

There are evident similarities between Ecocriticism and the Post-Nature narrative. However, there is an important distinction between the two. In ecocritical architectural design ‘Nature’ is re-evaluated, however, not in terms of the Post-Natural but from the realization that a pristine and untouched form of Nature never existed in the first place. In ‘We have never been modern’,

ecocritic Bruno Latour situates the absolute divide between nature and society at the core of modern civilization. However, with the development of science and technology it becomes impossible for this distinction to be held up. Nature and society have never been ontologically separated, but “one and the same production of successive states of societies-natures, of collectives” (Latour 1991). Latour insists that the Anthropocene is dominated by a growing realization of the entanglement of heterogeneous human and non-human agencies (Latour, 2015).

Instead of the claim of the Post-Naturalists that we have reached the end of Nature, an ecocritical perspective celebrates the Anthropocene because of the realization that “Nature” has always been a fallacy. Proponents present the existence of Nature as an unjust assumption and the romanticized human construction, which has always been “shaped and designed for human ends” (Marvier et al, 2012). This realization can be freeing for designers, environmentalists or policymakers, which legitimizes interventions at all scales. It refashions Nature as something open for technological reconstitution.

2.2.3 The Eco-Catastrophist narrative

The third is the ecocatastrophist narrative, presenting the Anthropocene as the tipping point of a dystopian biosphere collapse. It makes a stance *against* the discourse of Modernity. It proposes a story on civilization as an unsustainable practice, depleting resources and transgressing planetary boundaries. It presents the Anthropocene as the moment in time in which modern advancement faces *planetary boundaries*. The Anthropocene is, therefore, presented as a tipping point in the planetary shift towards sustainability and awareness of resource depletion and increased vulnerabilities. If we are approaching an imminent catastrophic future for humanity, a ‘bad Anthropocene’ asks for an opposite set of actions.

According to the third narrative, there are good reasons to be skeptical of the impulse to declare the “end of nature”. Ultimately, the third narrative sees society moving towards a rather apocalyptic future of limitations, collapse, and violence. It acknowledges the possibility of a collapse of industrial life and the eternal perpetuation of thermo-industrial development (Dobson 2007). It looks for alternatives to economic growth in possible post-growth resilient societies, in which consumption and production are drastically reduced (Bonneuil 2015: 27). It, therefore, departs from trusting that ‘green’ technologies will save the planet, warning against technological hubris. It values low-tech, democratic developments (based on environmental reflexivity and social innovation, such as a revision of consumption behaviors or localized production) over high-tech solutions. Many socio-ecological movements such as permaculture, the Degrowth and Transition Towns movements (Semal 2012), focus on the catastrophic

dimension of the Anthropocene (Bonneuil 2015: 26-27). The approach has connections to green political thought, which is characterized by the conviction that economic growth is to be limited.

The Eco-Catastrophic narrative draws on a perspective of Earth System Science. Presenting the biosphere as a single dynamic system is a metaphor by itself; Earth System Science is the most important precedent of imagining human responsibility for a changing planet. A radical new shift in the popular imagination towards thinking in terms of an *Earth System* key is key to the ontological novelty of the Anthropocene (Hamilton 2015; Hamilton and Grinevald 2015). The Eco-Catastrophist narrative focuses on (the lack of) resilience in the dynamic processes and the capacity for species to endure when the Earth system is under pressure.

[**2.2.4 The Eco-Marxist narrative**](#)

The Eco-Marxist narrative blames the problems of the Anthropocene on the unsustainability of the capitalist world-system and its inability to maintain and protect Nature. Followers argue that the Anthropocene started in the sixteenth century, with the onset of the capitalist system. The fourth narrative, therefore, moves away from technology entirely. Some prefer the alternative denotation the ‘Capitalocene’ because it points more explicitly to the avenue of human activity that wreaked havoc most.

The fourth approach wants to make visible how capital, not the *Anthropos*, is the driver behind biosphere collapse. One of the problems of the Anthropocene is the argument that we are all responsible for the environmental crises with its reverse implication is that none of us in particular can be held accountable. For example, it forgets that there are huge discrepancies between countries regarding their carbon emission levels. Capitalism and growing inequality are unmistakable aspects of the Anthropocene. The Eco-Marxist narrative reframes the Anthropocene for the elucidation of these hidden issues.

The first and second narrative could potentially have destructive effects due to their optimism about technology. Sentiments of techno-optimism reformulate the era as a justification to keep on going by the techno-capitalist sphere. Its supporters often remain uncritical of market-driven consumerism. However, the third and fourth narrative can invoke a sense of meaninglessness, and thereby lessen the need for practical solutions. Sociologist Kari Marie Norgaard claims that study shows that people lose attention to climate change when they realize that there is no clear-cut solution. We take into account only those problems of which we believe there is an action to be taken (Keim 2009).

[**2.3 The Anthropocene and visual culture: spread the word**](#)

The proposed storylines of the Anthropocene are linked to the visual culture in various ways. The first relation between visual culture and the Anthropocene is that data visualizations, satellite

imagery, climate models, and other precedents of planetary imaginings, frame the scientific discourse (Davis and Turpin 2015: 4). Complex set of data from a growing amount of recording technologies facilitates Anthropocene debates. The recorded data needs to be synthesized and visualized for it to be interpreted and debated. In order for the Anthropocene thesis to have a social effect, it has to be supported and propagated through culture.

The debates depend on culture because it is impossible to experience the Anthropocene due to its ungraspable scale. Because there is no way of naturally experiencing the Anthropocene, all of the before-mentioned storylines are strongly reliant on visual culture for their public distribution. All scientific discourses are reliant on images: “Scientific images are thus understood as providing the capacity to see “truths” that are not available to the human eye” (Sturken and Cartwright 2009: 281). Through visualizing the hard-to-grasp discourse, artistic projects can provide a sensory phenomenology of inhabiting a changing world. Anthropocene images bring into experience what otherwise would be beyond our apprehension.

It is hard to understand the Anthropocene because of its massive extent as a *hyperobject*, a term coined by Ecological theorist Timothy Morton (Morton 2010). *Hyperobjects* are “so massively distributed in time, space and dimensionality” that they are not visible to human eyes. Morton’s hyperobjects are vastly large abstractions; however, this does not mean that their catastrophic effects aren’t real. Morton explained climate change is a *hyperobject*. The notion *hyperobject* can help explain some of the characteristics of the Anthropocene (Morton 2010). Because of it being a catch-for-all, the notion Anthropocene is elusive. One of the central problems for the widespread adoption of the Anthropocene discourse is that the ‘planetary’ mode of thinking is too broad and complex.

The Anthropocene aesthetic provides a visual record and sensory experience of the Anthropocene, which facilitates public debates. However, in spite of good intentions, it is unlikely that ecoconscious art and design will save the planet. Still, by becoming attuned to this critical moment in the development of the biosphere, we are redirected towards thinking about new possibilities of being together in the world. Today, it is becoming clear that most challenges we face are unfixable; the only way to overcome them is by reviewing our values, beliefs and attitudes toward the future. To embrace denial ultimately means choosing for destruction (Collings 2014: 17). Choosing the opposite means radically re-envisioning how we see ourselves as a species.

Anthropocene visuals range from invoking a disturbing sense of nihilism versus trying to pose creative solutions for the present crisis actively; the sentiment is dependent on the narrative adhered by the designer. Hence, the four stories are expressed visually. Artists and designers promote awareness of the existing narratives of the Anthropocene, but can also develop

narratives of their own (Anderson 2015: 339). Here too, it is important to remain critical of the narratives that they develop. Much like in the scientific debates there is no consensus about the meaning of the term and its intended use for creative production.

Hence, the notion of the Anthropocene can help mobilize cultural producers to make gain a more important function in debates concerning the term. Art projects bring together work inspired by the Anthropocene and can contribute to visualize the systemic thinking it invokes. Art and design can non-normatively address a range of discursive, visual and sensual strategies that are not confined to regimes of political moralism or scientific objectivity (Davis and Turpin 2012: 4). Artistic engagement with the Anthropocene thesis is capable of opening up the collective imagination to think of novel ways of being. A trans-disciplinary cooperation involving art, but also architecture, can promote an integration of the scientific and public discourse concerning planetary change (Edeholt 2012: 156). In short, images of the Anthropocene (re)produce the Anthropocene and help ‘spread the word.’

Concluding remarks

The Anthropocene is the result of a practice of storytelling. There are four divergent understandings of the Anthropocene in circulation; these are expressed visually and linguistically through distinctive narratives. The *Naturalist narrative* has the following characteristics:

- The Anthropocene is presented as a moment of heightened awareness of the Earth system and increased human agency.
- It places the beginning of the Anthropocene in the Enlightenment in the eighteenth century.
- It presents an ending scenario of the (spiritual) dominance of humans on Earth. It is optimistic about the Anthropocene as the natural progression in the evolution of humankind.
- It recalls ideas about human exceptionalism and the pre-eminence of empirical science. It celebrates scientists as the safe keepers and most important actors in the Anthropocene.

The *Post-Nature narrative* has the following characteristics:

- It presents the Anthropocene as the moment in history of the end of Nature. Hybrid Anthropocene territories replace the Natural environment.
- It situates the beginning of the Anthropocene at the onset of Modernity, which recalls the conquest of Nature for the cause of societal advancement.
- The ending scenario is a resilient society that emancipated itself from the planet’s natural limitations and boundaries through the employment of high-tech solution

The Eco-Catastrophist narrative has the following characteristics:

- It situates the beginning of the Anthropocene as the beginning of anthropogenic impact with the onset of agriculture.
- It positions civilization as an unsustainable practice that transgresses planetary boundaries, thereby emphasizing the vulnerability of Earth systems.
- It presents the world as a *world-system under pressure*. The ending scenario of the Anthropocene is presented as the *collapse of world systems*, a development that can be slowed down by *moderation and scaling-down*.
- It values low-tech democratic solutions over high-tech interventions and aims for *moderation* in all societal domains.
- The Anthropocene is presented as the tipping point in environmental awareness.

The Eco-Marxist narrative has the following characteristics:

- The fourth narrative can be replaced by the denotation the ‘Capitalocene’.
- It situates the beginning scenario of the ‘Capitalocene’ with the *onset of the capitalist world-system* in the sixteenth century.
- It situates the ending scenario in apocalyptic *biosphere destruction*.
- It places emphasis on *capital* and *technology* as the drivers behind the destruction of the biosphere.

The different narratives of the Anthropocene all agree upon the eventual demise of the natural world because of Anthropogenic impact. This is what I call the Rhetoric of Decline, based on the work of Ursula Heise. Some claim an optimistic position and others warn about the destructive effects. The rhetoric of the Anthropocene debates can either lead to attitudes of fatalism or optimism. In order for the Anthropocene notion to become useful, it has to overcome the simplistic optimism/pessimism divide. Dalby states: “If it is simply assumed to be a neologism for environmental degradation, a trendy word for well-understood declensionist phenomena, a euphemism for imminent civilizational demise, or an apology for maintaining a profoundly unjust political economy of the present, then an intellectual and political opportunity will be missed” (Dalby 2015: 4).

Art and design have the unique competence to bring scientific knowledge to a larger audience, but they must be aware of their agenda and the effects of spreading the Anthropocene message. Anthropocene aesthetics gives an epistemology to the Anthropocene, which it naturally does not have. This means that discourses on the Anthropocene are explicated and publically distributed through a (visual) language. This gives design practices an important position in these debates. The Anthropocene in design practices provides the opportunity to *think forward*, to

imagine possible futures or to explicate which of the anthropogenic effects are damaging in the present. Reversely, the Anthropocene aesthetic can make us feel at ease with the present situation. Thus, the visual language matters for the public responses to socio-political intervention in environmental causes. In the following chapter, I look into how new Anthropocene narratives in design practices can be employed to *do good* for the planet. It provides the theoretical framework for analyzing architectural production in the Anthropocene.

Chapter 3: Going forward in Anthropocene

“There are no rules of architecture for a castle in the clouds.”

- Gilbert K. Chesterton

The Anthropocene offers daunting prospects for the future. The four understandings of the term build on a catastrophic time frame, which will either end in our future demise, resilience or heroic recovery. For the notion of the Anthropocene to have a constructive effect, it needs to overcome the rhetoric of decline.

For the establishment of a new and better future world, we need new narratives on the Anthropocene. Our stories have to stay critically aligned with the new multi-disciplinary, multi-scalar and multi-centred reality of the Anthropocene. The field of architecture can help develop and distribute these new narratives. What are ways to think beyond the usual framework of the Anthropocene? How to transgress the boundaries and limitations that we take for scientific fact?

3.1 Rhetoric of decline and the Post-Anthropocene perspective

To a large extent, Anthropocene science is an articulation of what environmentalist Ursula Heise described as ‘the rhetoric of decline’ (Heise 2010). Anthropocene discourses acquire their meanings and values through cultural interventions, both written and visual, most of which inscribe the rhetoric of decline.

Predominantly, the Anthropocene is a narrative of impending extinction of the human species. Despite the debates on the degree to which humanity still has agency in deciding on future developments, most parties agree that the Anthropocene is the period in which humans are said to have become the biggest threat to life on Earth. Australian cultural theorist Claire Colebrook is one of the scholars that push the Anthropocene towards its extremes. In her work she focuses on the likely possibility of extinction of humanity, thereby enabling a thought-experiment that must evoke an image of living life in a damaged world. According to Colebrook, a provocative line of thought must provide counter-images of the Anthropocene that do not rest on existing binary distinctions. Popular-science journalist Elizabeth Kolbert’s *The 6th Extinction* gives a very pessimistic account of a ‘bad’ Anthropocene. In her cover story for *National Geographic*, she framed the Anthropocene as a period of anthropogenically caused loss of biodiversity through habitat loss and ecological disruption. According to Kolbert, we are witnessing the sixth major extinction episode in the planet’s history. Thus, Anthropocene narratives heavily depend on the notion of extinction.

A Post-Anthropocene perspective can thereby help critique our ways of seeing and being in the world. Anthropocene narratives present a time frame that includes an ending scenario, which to a large extent is the reason for the public interest in Anthropocene science. Imagining a Post-Anthropocene is a thought experiment that can help examine the ways in which of human activity is damaging the world. Presently, it is difficult to imagine the perseverance of the biosphere. The pessimistic narratives offer a framework of extinction, and the optimistic narratives often exacerbate Anthropocene issues and thereby accelerate processes of demise. Today we are in need of new ending scenarios about the planet. Inspired by ecofeminist critique, this chapter explores new ways of thinking about the Anthropocene. According to the ecofeminist science, it is vital to stay critical about ontological assumptions in Anthropocene science and develop new narratives of our own. Architects that are familiar with the issues of anthropogenic destruction will agree that this entails designing for imaginative Anthropocene futures, as an ethical act.

3.2 Post-Anthropocentric ethics: the obligation to ‘Think Forward’

Engaging with Anthropocene discourses in a responsible and critical way requires careful deliberation. One of the frameworks to critique Anthropocene science is coming from ecofeminist scholarship and its examination of language and practice from a gender-conscious perspective. This approach is feminist in the sense that scholarship tries to displace ontological dichotomies and naturalized identities, through subverting held beliefs and myths. These assumptions in Anthropocene science are harmful to the world because they offer a vision of the future that is fixed and inevitable.

Feminist scholar Joanna phrases her standpoint on the Anthropocene as a non-systemic and non-normative ethical injunction, in her book *Minimal Ethics for the Anthropocene* (Zylinska 2014). She uproots larger and universalizing conceptual systems, by not providing any firm values (Zylinska 2014: 21). She suggests that the Anthropocene is a “crisis of critical thinking” and that “thinking is the most political thing we can do with regard to the Anthropocene before we go and do anything else”. Ultimately, Zylinska’s *Minimal Ethics* is a critique of our linguistic and logical faculties, and consequently of masculinist scientist, posing ontologies and meta-narratives. She proposes a post-anthropocentric ethics, by adopting the Anthropocene thesis while returning to critical thinking.

According to Zylinska, the notion of the Anthropocene has suffered from ‘big thinking’ – and has resulted in a new view of Earth that is totalizing and blind for many processes. The Anthropocene is a scalar problem, emanating from scientific hubris or thinking too big. She urges for a reconsideration of the scale of Anthropocene thinking. Zylinska cites Timothy Clark when she claims: “considerations of scale tend to undermine many policies, concepts and common-

sense beliefs about what we refer to as ‘our world’” (Zylinska 2014: 27). Zylinska encourages a position of modesty when it comes to scale.

Zylinska’s claim is that an ethical way of acting in the Anthropocene has to produce ‘new stories’ about the Anthropocene pragmatically. A critical Anthropocene is ‘necessarily fragmented: it gives up on any desire to forge systems, ontologies or worlds and makes itself content with minor, even if abundant, interventions into material and conceptual unfoldings’ (Zylinska 2014: 14). As a response to the notion of the Anthropocene she opts to refrain from presenting a new all-encompassing paradigm, thereby disrupting stable and all-encompassing worldviews. This can serve to promote what Jean-François Lyotard called “little narratives.” Zylinska explores apocalyptic narratives while also turning to some alternative creative interventions that allow us to *reimagine life, death, and extinction*.

Zylinska describes her method as “Critical Vitalism”. Looking for “signs of life in the middle of an apocalypse” means rejecting the standard Anthropocene narratives about the impending doom (Zylinska 2014: 13). This is based on a “post-masculinist rationality”, in which she embraces a more speculative mode of thinking (Zylinska 2014: 14). Taking life as a non-valorized minimal condition, Critical Vitalism remains attuned to disturbances and stoppages in life. She argues that we must see life as both a becoming and a fracturing process (Zylinska 2014: 17). According to Zylinska and many other feminist scholars, there is an inherent creativity in life’s unfolding matter. We must, therefore, be critical of scientific assumptions on inevitable demise. To work with our present-day crisis and transform it something good, we too must stay aware of our creativity.

The stories we tell in the Anthropocene are critical for its eventual outcome. There is something defeatist and narcissistic about fatalistic stories (Zylinska 2014: 10). The Anthropocene is an era with outspoken and evident narrative influences, blending scientific fact and literary fiction. Feminists’ critique of Anthropocene problematizes the narratives it invokes. This begs the question: If we ‘read’ the Anthropocene differently, what other outcomes could it lead to?

3.3 Thinking forward through Speculative Design

Design that seeks to alter the trajectory of the Anthropocene moves beyond the rhetoric of decline. Notably, Speculative Design is essential for imagining new futures and changing the developmental course of the geosphere. Anthony Dunne and Fiona Raby are authors of the book *Speculative Everything*, in which they reflected on 20 years of using design as a critical tool to explore cultural and ethical implications of technology. They coined the term ‘Critical Design’ back in 1999, which led to their notion of Speculative Design.

Dunne and Raby see in design a tool for “better understanding the present and to discuss the kind of future we want, and of course, one’s peoples do not want”. They usually take the form of

scenarios often starting with a what-if question and are intended to open up spaces for debate and discussion. They are by necessity provocative, intentionally simplified, and fictional. The fictional nature requires viewers to suspend their disbelief and allow their imaginations to wander” (Dunne and Raby 2013: 3).

Radical thinking in Speculative Design opens up additional alternatives to the seemingly dead ends of path dependencies. This entails disturbing our current way of living, suggesting that it is possible for our everyday life to change. It raises awareness, and elevates conceptual design as a form of critique: “Critical design uses Speculative Design proposals to challenge narrow assumptions, preconceptions, and givens about the role products play in everyday life” (Dunne and Raby 2013: 34). It is not obliged to offer easy solutions but provides *radical* imaginings of new visions of future societies. These imaginations can bring forth realities, concepts, and values; cultural production can, therefore, be described as world-making rather than just be representational (Dunne and Raby 2013: 105). They have the potential to stimulate critical thinking, by not offering single-track solutions but broadening our understanding of the world and to open up new perspectives on the Anthropocene.

Speculative design proposals fit into an *accelerationist aesthetics* proposing “prototypes of what comes after the inevitable [Anthropogenic] crashes, so that we might envision and evaluate our adaptations in advance” (Bratton 2013: 21). Therefore, speculative designs often present a mixture of catastrophe and survival: “Present always is a sense of dystopia and radical compromise with the technological and ecological powers-that-be or that have come to be, in large part from neglecting to think of the future when producing for commodity markets” (Anderson 2015: 344). Speculative Design can often be dark, or deal with dark issues: “Darkness is an antidote to naïve techno-utopianism, and can jolt people into action” (Dunne and Raby, 2013: 38). It includes a negotiation of new relationships to technology in possible techno-futures, as a way of adapting to a changing world and reimagining how we organize ourselves socially, politically, and spatially.

Following up on their theoretical framework, interdisciplinary artist Kayla Anderson looked at how Speculative Design can respond correctly and constructively to the debates on the Anthropocene. Speculative design is a way to raise consciousness on the Anthropocene and spark debate against cultural norms (Anderson 2015: 341). Its engagement with Anthropocene science leads to imagining future trajectories with a sense of open-endedness and an effort to alter its time frame. It entails the presentation of fictional futures, therefore, making a conscious leap from what we know today to where we envision ourselves in the future. One of the ways design can help build a sustainable future is to use design as a means for speculating how things could

be. This means that speculative design practices are not to solve the problems of the Anthropocene – the fact that they don't is what makes it constructive (Anderson 2015: 341).

According to Anderson, there is an inherent force in speculative designs. Imaginative designs, speculating on what is to come, can help broaden the spectrum of the possible, thereby creating new directions for future development. Through speculation, design is also able to open up spaces for envisioning radical futures: “Current Anthropocene discourse is plagued by narratives that are heroic, solutionist and masculinist, and that re-assert human dominance over the planet. Rather than contributing to these kinds of narratives, art and design – and in particular critical, conceptual art and speculative design- can act as platforms for critical and non-instrumental thinking, as they allow space for envisioning radical futures” (Anderson 2015: 346).

Speculative design projects in architecture for the Anthropocene must, therefore, be approached as *thought-experiment* and as a visual metaphor for socio-political and scientific themes. Speculative architectural projects are reflections of the culture we aspire to. In architecture, this entails the revival of the *utopian design* or the design of fictional futures. Increasingly, the Anthropocene is entering the architect's lexicon as the need for a new utopia. Speculation in architectural design can help look for ways of staying creative in the Anthropocene. Utilizing design to spur a public debate about the future is also called ‘discursive design’ (Tharp *et al.* 2008); this means that non-actualized architecture, or paper architecture, acquires new potential. Pragmatic necessities of the site often burdens built architecture; discursive architectural design is not limited in that way. The design of Utopias is, therefore, often limited to paper architecture; however, discursive design propositions can still have valuable effects on society. Design in search of a perfect world is important because it can be a vehicle to open up the imagination to alternative realities.

One important way of practicing speculative design in the Anthropocene is imagining the way we are moving from mythical Nature towards hybrid territories, as explained in the Post-Nature narrative and the related field of Ecocritical Theory. The conception of Nature as an organic untouched and balanced entity is threatened by human exploitation and thereby rendered obsolete by contemporary philosophy. Nature is replaced a hybrid form of society-nature, in which Nature becomes equipped with the cultural and vice versa. The Anthropocene invokes the question if we must prioritize existing ecosystems, leaving them untouched by humans, or whether our aim should be to let go of the idea of ‘untouched nature’ for socio-natural landscapes. When architecture reacts to climate change by coming back to nature, they take a step backward: “Falling into the specter’s trap of natural preservation are ‘feel good basics’ such as ‘sustainable design’” (Zivkovic 2012: 102).

Thus, thinking in terms of the Anthropocene naturally deconstructs commonly held beliefs. Notably in architecture, this becomes apparent; speculative design in architecture can help ‘deal’ with this process. In architecture, it has the potential to provoke ontological re-envisioning in favor of a Post-Anthropocene philosophy. The name of the Anthropocene alone, suggests that the world is becoming an echo chamber in which the Anthropos becomes the primary source of agency (Szersynski 2015: 2). Instead of eliminating the problem of Nature, the Anthropocene paradigm can also problematize architecture’s tendency to privilege humans. One way of rejecting this is by turning towards anthro-de-centric thinking. This entails the rejection of anthropocentrism, or in other words the ‘privileging the human over the non-human’. Rejecting human privilege is related to Donna Haraway’s notion of *Making Kin* amongst the species. However, her analysis goes much deeper. As ecocritical theory helps address the fallacy of Nature, Haraway exposes the weak notion of the “Human”.

3.4 Speculative Fabulation and ‘Making Kin’

A new important way of critically engaging contemporary design with the Anthropocene comes from the work of feminist sociologist Donna Haraway and her practice of *Speculative Fabulation* and *Making Kin*. Haraway reviews the era in its entirety by imagining an “entangled world of living and things in which are relaxed the lines marking off the human from the non-human” (Anderson 2007: 34). She argues that Anthropocene debates enable us to rethink the notion of the human and the tenets of the interaction with humans and non-human agents on the planet. Haraway claims humans are compost, by which she presents a world in which all earthly creatures are connected. Her ontology has important consequences for how she conceptualizes the Anthropocene.

Since 2014 she has taken an active position in the debates on the Anthropocene, arguing to broaden the notion and rendering it more complex. In 2014, Haraway gave a keynote lecture at Aarhus University in Denmark, at the AURA (Aarhus University Research on the Anthropocene), titled “Anthropocene, Capitalocene, Chthulucene: Staying with the Trouble”. In 2015, it was followed up by the essay “Anthropocene, Capitalocene, Plantationocene, Chtulucene: Making Kin” in the *Journal of Environmental Humanities*. Haraway redirects the debates on the Anthropocene toward her own ontology. She describes her scholarship as an on-going process of reconfiguration what is perceived as Nature, and she has had success in doing so (Davis 2015: 257). In light of the Anthropocene thesis, her work is very much relevant again.

Haraway is concerned with the question how to live well on a vulnerable planet. She sees the Anthropocene not as epoch, but as a boundary event that marks severe discontinuities (Haraway 2015: 160). Biologist Anna Tsing, with whom Haraway works together, argues in her paper “Feral

Biologies”, that the previous era of the Holocene was the period in which *refugia*, places of refuge, existed to sustain the rich cultural and biological diversity (Haraway 2015: 160). The inflection point between the Holocene and the Anthropocene is the wiping out of most of the *refugia* from which species assemblages can be reconstituted after destructive events (Tsing, 2015). According to Tsing and Haraway, the task at this moment is to make the liminal moment of the Anthropocene as short as possible by joining forces to reconstitute these places of refuge and salvaging the world’s biodiversity and assemblage of species.

According to Haraway, being in the world means being involved in a process of *Sympoiesis* (making with the other species on Earth); hence, she speaks of humans as *compost*. The different species in the world make stories together; life-stories are compositional due to the thick web of interconnectivity amongst the world’s organic and non-organic entities. Each organism reveals the interconnectivity because it shares in the processes of each other’s becoming. This is also the case for humans. Haraway thereby critiques the notions of human exceptionalism and ontological individualism, which she replaces with a shared Earthly ontology. The invention of an insulated and circumscribed human species at the dawn of Modernity is faulty and illusionary. She argues that the world is continuously made by and from an assemblage of living and abiotic actors. “No species, not even our own arrogant one pretending to be good individuals in so-called modern Western Scripts, acts alone; assemblages of organic species and abiotic actors make history, the evolutionary kind and the other kinds too” (Haraway 2015: 159). Haraway instead states: “we are *compost*”. The human species is and has always been a *sympoietic* entity, an entity made with the world, not separate from it.

Because it brings about a newfound realization of interconnectivity, Haraway argues that there is a place for the Anthropocene in our society in spite of the arrogance and hubris that led to its emergence. She wants to find a language that builds on this realization of the “dynamic, ongoing sym-chthonic forces and powers of which people are a part, within ongoingness is at stake” (Haraway 2015: 160). Her task is to find an Anthropocene that integrates this realization of interconnectedness among the species and other entities, or to integrate the way we are connected by “*kin*”. For this reason, Haraway proposes to rename the Anthropocene once more, this time by creating an unexpected and inventive term.

She succeeds in finding a new name in the notion of the Chthulucene. Instead of pointing towards the *Anthropos*, the Chthulucene entangles “myriad and intra-active entities-in-assemblages - including the more-than-human, other-than-human, inhuman and human-as-humus” in a variety of temporalities (Haraway 2015: 160). She does not base her Chthulu on the patriarchal demon-monster created by SF-writer H.P. Lovecraft in his Chthulhu Series, although there are outward resemblances (Haraway builds on the metaphor of tentacles in the beard of

Lovecraft's Chthulhu).² Her Chthulu is derived from the Greek word for 'In, under, or beneath the earth', referring to "the earthly ones, or the beings of earthy worlding" (Haraway 2016a).

Haraway's account of the Anthropocene relates to her previous work in the field of Science and Technology Studies. She approaches the study of scientific practices through the lens of SF, an abbreviation assigned with her multiple meanings. For Haraway, SF stands for *Science Fiction*, *Speculative Fabulation*, *String Figures*, *Science Fact*, and some other variations. Through the lens of SF, she argues that in scientific practice there is an ever-present storytelling aspect: "Scientific practice may be considered a kind of story-telling – a rule-governed, constrained, historical craft of narrating the history of nature" (Haraway, 1989: 4). Thus, scientists write theory-fiction, i.e. produce literary visions of the 'real' world. Anthropocene scientists also produce such visions; in doing so, most of them adhere to the aforementioned rhetoric of decline, creating a rather rigid ontology and narrative arch for others to oblige too.

The Chthulucene functions as an effort to disrupt the singular Lyotarian grand narrative of the Anthropocene. Speculative Fabulation, or telling alternative stories of the imagination and the realization of the limitations of a singular narrative, problematizes existing Anthropocene discourses. The Chthulucene presents a vision of the world that is never singular, but rather consists of multiple and complex worlds that are products of fiction. It, therefore, does not break down into good and bad scenarios, like often is the case with the Anthropocene. Haraway prefers multiple narratives: "We need stories (and theories) that are just big enough to gather up the complexities and keep the edges open and greedy for surprising new and old connections" (Haraway, 2015: 160). Telling stories can have a potentially disruptive effect when they envision another way of being in the world.

To open up the trajectory of "the" Anthropocene, Haraway introduces the figuration of Chthulu. The Chthulucene is an alternative denotation that reviews the era all together through alternative storylines on "who will live and die, and how" (Haraway 2016a). Haraway is concerned for all the 'critters' that inhabit the world in the Anthropocene and tries to imagine a future that is hospitable to all critters. In doing so, Haraway renders the Anthropocene much more complex, and tries to reimagine the era in its entirety: "What if we started instead by renaming our epoch, even –especially- in the Geophysical Union, with sympoietic power, to signal the on-going and non-Euclidean net bag of the Chthulucene, a story of SF, speculative fabulation, speculative feminism, scientific fact, string figures, so far? This unfinished Chthulucene must collect up the trash of the Anthropocene, the extremism of the Capitalocene, and make a much hotter compost pile for still possible pasts, presents, and futures" (Davis 2015: 269).

² Notice the difference in spelling between Haraway's Chthulucene and Lovecraft's Chthulhu.

She thereby argues for imagining new stories on human and non-human species, and their way of living on a shared planet. Chthulucene Architecture's task is to facilitate "kin-making" among all the Earth's critters. This would entail the reconstitution of places of refuge to protect and enhance biodiversity. Moreover, architecture has the potential to reconnect and re-familiarize the human mind with the ongoing and intra-connected assemblage of species through the lived environment.

Concluding remarks:

Crises have the ability to invoke critical thinking; it can have a productive effect because it promotes reactions that go beyond the remedial responses that reproduce existing systems of thought. Where in non-crisis situations the extent of change is limited, crises indicate the need for a radical rethinking as an asset for progress beyond a system that incurred the crisis situation (Slenka 2013: 9). It can similarly help re-examine the efforts of architecture as something that promotes, rejects or remains indifferent to the harmful anthropogenic impacts. To adequately and efficiently respond to the crisis posed by the era, the field of architecture must be crucially aware of the assumptions and claims to truth in Anthropocene science.

Concluding this chapter, I take from Zylinska's work the ethical obligation not to oblige to the rhetoric of decline but to *think forward* in the Anthropocene. This entails the configuration of multiple '*little narratives*', which offer a sense of hope and an imagination of a resilient and hopeful future.

The first way of *thinking forward* in architectural design is articulated in the work of Dunne and Raby. This entails that designers are able to conform to existing Anthropocene stories or create new narratives through Speculative Design. From their work I gather:

1. The four narratives from the previous chapter are expressed as scenarios in Speculative Design projects.
2. Speculative Design creates an 'accelerationist aesthetic' in which futures scenarios are played out in the architect's imagination. This can enable new and better ways of living, or ways to *stay creative* in the Anthropocene.
3. Speculative design in architecture does not necessarily have to be realizable projects, but often involves utopian designs, paper architecture, or *discursive design*.
4. 'Good' Speculative Design does not offer solutions but tries to invoke new ways of thinking.

In order to move forward in the Anthropocene, we are in need of new ways of thinking. New stories reconfigure our understanding of the Anthropos and Nature, our presence on earth, and the future that waits. There are more than one ways of rebuilding the Anthropocene narrative. The stratigraphic gaze re-imagines all entities on Earth as inhabitants of universal timescale; the Anthropocene notion of the Anthropocene, therefore, problematizes our understanding of ‘human’ and ‘Nature’. It forges a relationship between the human species with the natural world. It thus upends the assumption that we live in a non-human geological context and undermines traditional humanistic discourses of which the mystified reading of Nature is a substantial part. The thesis redirects traditional humanistic dichotomies, by questioning the de-centred human being separate from nature. A geological turn in the humanities, therefore, moves away from humanist ideology.

A new way of critically engaging with the Anthropocene is by deconstructing the notion of Human. Instead of the era of the Anthropos, Donna Haraway renegotiates the Anthropocene as the era of interconnectedness among the species, the Chthulhucene. According to Haraway, the Anthropocene is a period of destruction of diversity caused mostly by anthropogenic activities. However, by depleting the planet's resources and polluting our environment, we are destroying ourselves because of the diminishing web of life of which we are a part. Architecture in the Chthulhucene has the responsibility to facilitate life and reconstitute places of refuge for all life forms, even beyond the human. Architecture in light of Haraway's claims firstly recognizes the way that humans are part of a deeply entangled web of species, organisms, and non-organic materials: “All critters share a common “flesh”, laterally, semiotically and genealogically” (Haraway 2015: 162).

Based on her practice of *Speculative Fabulation* I propose the concept of *Speculative Fabulation in Architecture*. Haraway calls forth not to be self-enslaved to the “techno-tragic story of the self-made final death of the Anthropocene” (Davis 2015: 268). She thereby detaches from existing narratives on the Anthropocene, which eliminates the need for finding a better outcome. Regarding Haraway's statements, speculating would mean creating new trajectories of time, multiple stories, and worldviews. Similar to the ecocritical theorists, she attempts to change the common conception of nature, followed by the notion of the Human. She seeks to undo the binary oppositions that occupy our linguistic capabilities. She offers a new language. Architects too are able to construct new languages for new world-conceptions in their design. This is what I call Speculative Fabulation in architectural design.

Thus, what I take from Haraway's concept of the Chthulhucene is the possibility of a Chthulhucene Architecture. Haraway's notion of the Chthulhucene emerges as a fifth narrative,

which can offer a constructive approach to the Anthropocene. In architecture, designers can adhere to this fifth, multifaceted storyline. The fifth narrative is:

1. Non-singular, but multiple and dynamic. Instead of providing an all-encompassing narrative, it provides ‘little narratives’. This leads to a renewed sense of humility, side-stepping scientific hubris. Moreover, it adds a renewed sense of importance to the practice of storytelling.
2. The Chtulhucene is a proposal for an era of the *tentacular interconnectedness* of the world’s entities. It integrates responsibilities for *all actors* on earth, be in human, organic or non-organic. The Chthulhucene proposes a view of the world and history as an entangled assemblage of heterogeneous organic species and biotic and abiotic entities. Humans are a part of this earthly assemblage. *Chthulucene Architecture* must facilitate *kin-making*.
3. It is related to Haraway’s practice of *Speculative Fabulation*, which tries to create new languages and stories that can have constructive effects for the planet.

The following chapters include three architects that argue we are witnessing the moment of transition into a new architectural practice and self-understanding. They respond directly to Anthropocene debates. I arranged the descriptions of the case studies as followed. Initially, I give a short introduction on the architect(s) and his/her/their work. These introductions include the professional history, the current position, a short indication of the relevancy and the ways in which the architect(s) associates his/her/their work with the notion of the Anthropocene. Secondly, I gather from existing interviews and public statements the ways the architect(s) explicates the meaning of his/her/their profession and the expectations of their profession for the future. Subsequently, I provide examples of the design projects. Lastly, I interpret these statements and relate these statements to the theory from the previous chapters.

The central questions that this chapter will address are as followed: how are architects actively trying to give new meaning to the discipline of architecture in the Anthropocene? How do makers eschew their understanding of the practice of an architect? What context do they see for their design practices?

Chapter 4: Liam Young

The first case study is the Australian speculative architect Liam Young. Young formerly worked for leading firms like Zaha Hadid Architects and LAB Architecture. Today, he heads think tanks, a design studio, and fills teaching positions at the Architectural Association in London, Princeton University and Southern California Institute of Architecture in Los Angeles. Young has been acclaimed in mainstream and architectural media and was named by Blueprint Magazine as one of the 25 people who will change architecture and design.

Liam Young's discourse on architecture in the Anthropocene is derived from the following sources: Nextnature.net published an interview with Young on March 29, 2015, in which he addressed the role of speculative architecture in engineering the future; TL Andrews conducted an interview with Young at the *transmediale* festival in Berlin on February 17, 2016; Tank Magazine published an interview with Young by Sumi Bose, in issue 61; Future Urbanism published an interview titled "Global Scale Problems need Global Scale Communities" with Young by Vitaly Avdeev in 2014; a YouTube recording of the lecture and Multiscreen Storytelling performance "City Everywhere: Kim Kardashian and the Dark Side of the Screen" performed at Sci-Arc in Los Angeles 28 October 2015.

4.1 the dissolution of the architect

Although Young started his career as an architect in the traditional sense, he argues that the architectural skill set far exceeds designing buildings. He advocates for dramatically expanding the scope and mobility of designers. He has a strong collaborative approach and operates in the spaces between design, science, and fiction. Young mostly focuses on the often strange and disturbing effects of our globalized and technology-centred culture.

Young founded the Unknown Fields Division, an award-winning nomadic workshop with which he travels to distant landscapes, industrial ecologies, or alien territories. With UFD he goes on annual expeditions to investigate how the contemporary landscape is changed because of technology, thereby uncovering emerging trends and slumbering indications for possible future developments. Alongside Kate Davies, he heads a team of researchers with whom he developed projects through expeditions in the Tjernobil exclusion zone, the Lithium evaporative pools in Bolivia, the mining landscapes of the Australian Outback, and the Kazakhstani spaceport

Baikonur. Based on the research with the UFD, Young extrapolates fictional worlds that are articulated in his design projects.

Secondly, Young is the founder of Tomorrow's Thoughts Today, a second think tank that explores the possibilities of urban futures and consequences of emerging technological developments. With the think tank, he conducts workshops on architectural speculation and develops fantastic, speculative, and imaginary urban designs. The research group travels Earth to investigate emerging trends and uncover "little pockets of what is to come".

Young moves away from the practice of building and heads towards a practicing of envisioning. In his work, he imagines scenarios for future developments in which he tries to speculate on the possibilities of technology for him to engage with the world's increasing complexity and promote discussion and critical thought. Traditional architectural designs are becoming a form of luxury items for the wealthy because according to Young it has lost its agential role in configuring space (Next Nature 29 March 2015). Therefore, the traditional conception of the architect has to change:

"Listen, I advocate for an utter dissolution of the term architect. I think an architect's skills are completely wasted on making buildings. But I don't see it as weakening the profession, I see it as strengthening. It means the profession can find traction in other fields: the architect as strategist, as politician, as planner, the architect as curator [...], as activist or storyteller" (Tank Magazine Autumn 2014).

The architectural profession will have to diversify for it to survive. In the future, architects will expand their trade with roles as politicians, urban planners, tech company executives, researchers, writers and performers (Next Nature 29 March 2015). Moreover, speculative architecture makes it possible for the architect to tell stories that can change the world for the better. Because of his informed and privileged position, the architect can steer technology in the way that it reconfigures society. Young and Davies practice this when he explores the wanted or messy implications of technologies. The future is beginning to look like a project once more, and the architect has the potential to become its designer *and* warden.

"For the last few years we've really been concerned with the possibilities of the present, the idea to build now, to buy now, the culture that scrambles for projects for Dubai and China, to knock out a world to buy next door, to expand and to build, the possibilities of the last few years have been about the tangible, the physical, the imminently buildable and inherently possible. Now that we start to reach a time this eases in a way, now that the economy of

building starts to slow, now seems like an appropriate time to start to look forward. The future is beginning to look like a project again, and we can start to look for ways that these fictions, these speculative possibilities, can be actually be launched with such a force that they begin to find traction” (Young 29 May 2009).

According to Young, the Anthropocene represents a moment of transition, in which the Anthropos (represented by architects) is replaced by technology as the dominant force in the world. He positions technology as a significant agent and driving force behind evolutionary or ecological change, which at this point shapes the planet at an unforeseen scale. It is critical that at this moment in time, the technological development is going faster than our capacity to comprehend its consequences. According to Young technological advancement increasingly decides on the future form of a city; this displaces the architect’s authority on space:

“The reason my work has moved far away from architecture in the traditional sense of making buildings is that it is such an inherently slow medium. [...] the architect, once the vital agent of change within cities is now being displaced by the technologist, strategist and network engineer” [...] “When the city is evolving so quickly it’s difficult to respond if you’re operating in a discourse that has a five- or ten-year project lifespan. Equally, the forces that are shaping the city no longer exist in the physical spectrum; they’re more like technologies – cloud computing connections, ubiquitous networks” (Tank Magazine Autumn 2014).

Similarly, because of the inherent technological presence in history, the notion of Nature is a mere cultural construct. According to Young, we should no longer cling onto preserving Nature, but be at ease with imagining and producing new ecologies:

“Nature is a moving target that is purely defined based on myth and belief. I think we need a new word for nature that actually talks about technology as an implicit force within it. We have to get away from the binary oppositions of nature and technology in order to start thinking about how technology can facilitate new opportunities for ecology” (Next Nature 29 March 2015).

The work of Liam Young is represented by two major works in 2014: the project “New City” and the collaborative project “Under Tomorrow’s Sky”. Both projects represent his attitudes regarding the future of architecture in the Anthropocene.

4.2 Project “New City” (2014)

The project “New City” illustrates how Liam Young concretizes his approach to architecture in the Anthropocene. New City was a project developed by Young and Tomorrow’s Thoughts Today. It consisted of a series of animated skylines of the near future; Young describes the work as the result of a practice of ‘speculative realism’. The project consisted of a series of animated skylines of near futures, extrapolating and satirizing technological trends while moving between documentary and the visionary. The video images were intricate and exaggerated versions of present-day urban ecologies. For the animations, authors were invited to write a short story with each skyline. The narratives by respectively Jeff Noon and Pat Cadigan tell dark stories about the lives of inhabitants of the future urban visions.



Figure 1: Liam Young, Samsung City (2014)



Figure 2: Liam Young, Edgelands (2014)



Figure 3: Liam Young, The City and the Sea (2014)

The animated skylines represent the world as industrialized urban ecologies and the technologies, algorithms, and mechanisms that produce it. Young gives a representation of the future of urban environments; the cities are viewed from the outside, giving a comprehensive view of future developments. He depicts urban life without nature, organic growth or humans; the cities are a composition of structures, consumer brands, and technologies. There is an absence of the color green, indicating the disappearance of the organic in the urban environment. The architectural structures are high-rise towers, infrastructural systems, and building technologies. The cranes elevate the building structures, which are all in gray and black (figure 1). Fog, mist or pollution otherwise, surrounded the cityscapes, indicating toxicity in the environment (figure 1, 2, and 3). This is underlined with the purple and brown colors.

The images do not feature humans, despite the faces on the screens (figure 2). Technology, however, is omnipresent and forms both context and content of what is displayed. The images feature technology in the screen and words written in neon lights. The screens show faces, consumer brands or other signs. In the spatial organization of the images, technology and structures occupy the entire width. There is no hierarchy in the displayed structures. There is no clear focal point; instead, the structures all look similarly (un)important and disturbing. The video installations present an urban future within a time loop; there is no clear indication of temporal change, which gives a sense of stasis and hopelessness.

4.3 Project “Under Tomorrow’s Sky” (2014)

The second project “Future Perfect” is a fictional future city presented as a series of illustrations, videos, narratives, and miniature model city. The interdisciplinary team of Under Tomorrow’s Sky at the MU Foundation in Eindhoven in 2014 initiated the collaborative project. Young led an assembly of “scientists, technologists, illustrators, science fiction authors and special effects

artists” to collectively imagine a place, its surrounding landscapes and the stories that emerge there. Young collaborated with Rachel Armstrong, Bruce Sterling, speculative architecture blog BLDGBLOG, Next Nature, the Centre for Science and Imagination, and others.

The project featured an imaginary place that functioned as a stage set for fictions, emerging infrastructures, and design experiments. In this project, Young was able to explore the possibilities of emerging biological and technological research and envision a new world. The project was first presented at the MU in the Dutch city of Eindhoven on August 10th 2014. The show featured a room-sized miniature model and artistic visions of Young’s fictional city, which was the backdrop for film animations, stories and illustrations on Young’s new ecological urban vision.



Figure 4: Under Tomorrow's Sky "Future Perfect" (2014), miniature model installed at the MU, Eindhoven.



Figure 5: Under Tomorrow's Sky, "Future Perfect" (2014), close-up of the architectural model.

The images of the architectural model feature a mountain landscape with cave-like human-built structures crossing the entire span of the model. The houses feature lights, clothing lines and furniture, indicating human settlement (Figure 5). Humans are absent, although their presence is implied in the wash lines, lights, and boats and flying machines (figure 4; figure 6). The natural landscape and structures are both brown and green; it is hard to distinguish the one from the other. The structures merge with the colors of the landscape (Figure 4). Again there is a color scheme with minor use of green, indicating that Young moves away from contemporary conceptions of Nature.

The second image is one of the artistic impressions on Young's urban vision offered by Factory Fifteen, a UK based film and animation studio. This picture offers a more detailed depiction of actual life in the new urban ecology; the image provides a look at life from inside the city. The project presents an urban environment in which the city and the environment are merged into one symbiotic ecosystem. A geological formation of caves represents the city, inhabited by human and non-human life. Again, technologies and human objects imply the presence of human life. It features an assembly of drone-like flying machines, television antennas, and clothing lines. Animals and plants, hanging from the sides, inhabit the cave-like structures. Concerning spatial organization, the gray and purple of the world merges with that of the sky, indicating that both are regarded as the human domain. This is further emphasized by the drone technology, which draws attention upward into the sky. The housing structures are not distinguishable from the rock formations, indicating that there is no clear divide between those. Again in this project, there is no architectural design in the traditional sense. There is no clear priority given to either context or structure; both merge together into one constructed environment.

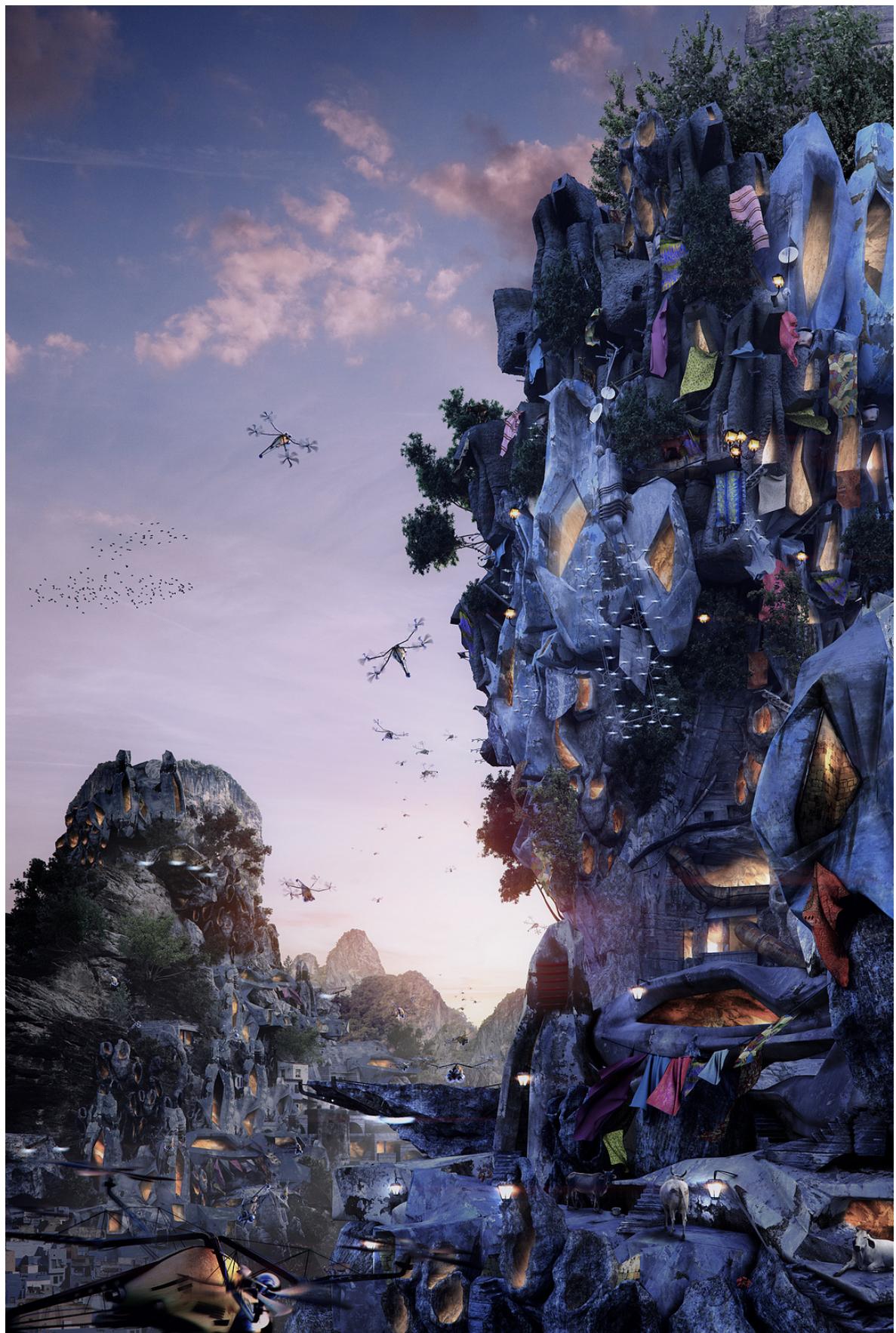


Figure 6: Under Tomorrow's Sky, "Future Perfect" (2014), Concept Art by Factory Fifteen.

4.4 Interpretation

The first project, New City, is an example of how an architect can visualize the Anthropocene and illustrate scientific data. Young uses his expertise to visualize events in the Anthropocene trajectory, both in its past and future phases. The first project consists of projections of future scenarios; these are urbanized, anthropogenic territories. The New City project videos present an endless loop, with a future outlook. This is speculative in the sense that it projects images of future societies that end in a similar end scenario, a dark *end-of-history* look. Instead of imagining new futures, it stays with what is already. The first project poses as a warning sign about the development of human cities. Young presents the urban environment as a disturbing and gloomy image of a toxic future, without human or organic entities. Describing his previous activities as an architect in the traditional sense as “utterly fucking irrelevant” (Tank Magazine 29 March 2014), Young makes a conscious move towards a position of the architect as society’s warden.

In the introduction, I mentioned that the discipline of architecture contributes to the experience of living in a damaged and increasingly toxic world. In his designs, Young mourns the disappearance of the natural world. These models present melancholic visualizations of human-caused changes in the natural environment. The existence of pristine and overwhelming Nature is disappearing. This relates to the way that the Anthropocene is understood as a visual experience of Anthropogenic biosphere destruction. Young is aware of these experiences and exaggerates them in his project when he repurposes the entire world as a machine. In New City, Young focuses on unpleasant and severe effects of global technology-centred culture; he implies that technology has taken over the steering wheel because technological forces are shaping the city, cloud computing, networks, et cetera. Moreover, Young depicts the industrialized cities from the outside, giving the spectator a position of melancholic distance. The lack of human depiction implies a decrease of human agency, underwritten by Young’s statements. He claims that architects are no longer in charge of the development of urban environments, but technologies are.

In the first project, Young speculates on futures in which technology has taken over ownership of the urban environment. He thereby practices speculative design and suggests a time frame of the Anthropocene with a beginning scenario with the onset of urbanization and a final scenario as the toxic urban environments in which technology takes over. Young thereby argues that we are in the process of the disappearance of Nature in the Anthropocene, which is displaced by technological interventions. In this sense, Young agrees with the Eco-Catastrophist narrative by showing the apocalyptic and dark consequences of the urbanized environment.

His approach in the second project adheres to a practice of Speculative Fabulation. In the second project, Young thinks forward by creating new future scenarios. Young and his

collaborators present a more optimistic view of the future of the built environment. They offer a utopian future of a post-capitalist landscape filled with life and new possibilities. *Under Tomorrow's Sky* projects an idealized and unexpected future. It presents peaceful images of the future of the built environment in harmony with the natural environment. To underline this sentiment he gives the spectator a position from inside the 'city', instead of representing it from the outside. In the idealized future, he positions technology as the mediator between the natural environment and human culture. Humans are absent in the projects; however, technology and human objects imply the presence of the Anthropos. Young thereby connects technology to the Anthropos and replaces the latter with the former.

His depiction of technology, flying drones, infrastructural technology, indicates that Young sees technology is the driver behind human development *and* ultimately of the Anthropocene. This indicates that in his view, the technological agency is larger than the agency of people. His statements on the first project further underline this. He asserts that Nature is a fallacy defined by myth and belief. He claims that technology can facilitate new opportunities for ecology. Thus, he adheres to the Post-Nature narrative in which Nature is to be replaced by hybrid human-nature territories, as indicated by the cave structures.

Although Young presents elements of the natural world, in the cave structures, plants, and animals, his understanding of Nature and Technology is problematic. His harmonious and hybrid cityscape indicates a return of Nature. It references the Eco-Marxist narrative because it advocates scaling back and consuming less, indicated by the simplicity of the cave structures. At first glance, the natural environment is inhospitable, with the high mountains and valleys making up for the hard living situation. However, according to Young technology can overcome the difficulties posed by an inhospitable environment; he thereby moves away from the Eco-Marxist narrative. He hovers between the Post-Nature narrative and Eco-Marxist narrative. Young appropriates the Post-Nature *and* the Eco-Marxist narrative by advocating a new more conscious way of dealing with technology.

Because of the built environment merges with the natural world, Young looks for a new role of the architect. In the Anthropocene, he thereby explicitly moves away from his traditional role. The size of his model, without a clear division between the central point of focus and periphery, suggest that there is a movement towards landscape architecture or large-scale architectural intervention in the Anthropocene. However, the cave-houses are not architectural in the traditional sense but are designed through and with the naturally occurring environment or the mountain formation. The role of the architect, therefore, is to facilitate such a relationship between human and natural domains by steering technological development.

Thus, Young presents a complex mixture of narratives, which makes his understanding of the Anthropocene challenging to ‘read’. He employs different narratives in the two projects. By mixing narratives, Young creates a new narrative. He gives new meanings for Nature, however, does not revise Anthropocene histories. He does not show how entangled bonds exist between species, materials, et cetera. However, he does give an indication of the ways that human and the natural worlds can make new connections. His stories, thereby, create new nature-culture compositions that can elevate the world into Anthropocene territories.

Concluding this chapter, it is important to state that Young is an architect that has stopped building. Moreover, he argues for the utter dissolution of the figure of the architect. Young speculates on Anthropocene futures and uses his insight to produce images of the future that must pose as a warning. His design projects are discursive, enabled by his practice of storytelling. His understanding of the role of the discipline of architecture is that ‘old-world’ practices of designing buildings must be replaced by a more constructive practice. His new practice exceeds designing buildings and has to find traction in other fields. He positions himself as warden, protecting society from unwanted future development (projecting cultural trends and forces that are at work). He evidently moves towards envisioning, notably in the second project. His practice of speculative fabulation legitimizes his new endeavor of creating new narratives that steer the Anthropocene in better directions. He proposes a new future scenario, a better future with hybrid territories for humans and non-human species. Young states that there is an agency in his designs and that the architectural imagination enables to prevent the worrisome scenarios posed by the New City project. Young’s practice of storytelling creates the future, which enables him ‘thinks forward’.

Chapter 5: Rachel Armstrong

The second case study is the work of experimental chemist and innovative architect Rachel Armstrong. Armstrong is widely regarded as a pioneer in the field of experimental architecture: she is a professor of Experimental Architecture at Newcastle University; in 2014, she was added to the Citizens of the Next Century list by Future-ish; he was listed in the Wired 2013 Smart List and was included in the 2013 ICON 50. In 2010, she became a Senior TED Fellow, after giving a viral TED talk in 2009 titled ‘Architecture that repairs itself?’ As a TED fellow, she established an alternative approach to sustainability, coupling computational properties in living organisms and built environment into something she calls ‘Living Architecture’. As a sustainability innovator, she investigated new approaches to building materials through Living Architecture, suggesting that it is possible to develop buildings that share characteristics with living systems.

Rachel Armstrong’s discourse on architecture in the Anthropocene is derived from the following sources: the TED talk she gave at TEDglobal 2009, “Architecture that repairs itself?”; A recording on YouTube of a talk at the symposium “Scavengers and Other Creatures – Anthropocene and the Unbuilt” at November 3, 2015, at the AA School of Architecture; A series of essays published on September 24, 2012, in *Organs Everywhere (OE)*, edition 4 titled *Material Shifts*; a scientific essay published in *Life* in 2014, titled “Designing with Protocells: Applications of a Novel Technical Platform”.

5.1 Exploring the black skies ahead

Armstrong argues that in the Anthropocene, we need to re-engage with questions that are so multiple, heterogeneous, and complex that we cannot understand them from a singular perspective. In the Anthropocene, she claims, there is an overlapping and transgressing of previously well-circumscribed boundaries, geographies, and disciplines, which makes it a promising time to experiment with alternative perspectives:

“[...] what would define the ecocene [Armstrong’s alternative denotation for the Anthropocene], for me, is actually not a hegemonic replacement of the industrial, with the ecological, but actually how we navigate these competing alternative realities, how do we actually bring together all the knowledge sets, that we have available to us, and navigate through them so we can find the opportunities for radical re-synthesis, radical re-visionings, and to open up new spaces for the imagination and for architectural practices” (Armstrong 3 November 2015).

The discipline of architecture also needs to be aware of the increasing complexity of world systems. Armstrong integrates this realization with her practice with her design and research studio “Black Sky Thinking”. The website of Black Sky Thinking explains his practice with the following welcoming words:

“Black Sky Thinking invites you on a journey of discovery to explore new terrains that exceed your current capacities, the reach of predictive frameworks and even the limits to your own imagination. The services Black Sky Lab provides are aimed towards “organizations and communities that want to break with their current horizons and engage Black Sky Thinking to create permission to suspend normal logical thinking via positing *Projectionares* that become entangled with Black Sky Thinkers and start to locate the *Futureprints* that radically reframe the innovation challenges they face” (Black Sky Thinking 2016).

Armstrong differentiates between “Blue Sky Thinking” which is a “cousin of Straight Line Thinking”. She states that Blue Sky Thinking is an imagined and speculative leap into the future, beyond current beliefs but still with a favorable desired and deterministic outcome in mind. In other words, Blue Sky Thinking is a practice of speculative design. However, Armstrong tries to move beyond expectations and beliefs. She wants to develop “pathways to uncertainty”, with her Black Sky Technique:

“Black Sky Thinking is when an individual or organizations want to reach beyond the Blue Sky’s current frameworks and pre-determined projections into the terrain of the unknown. But more than this, bring this unknown into the present in a way that has immediate effects and engages others, always cognisant that the ‘Future Is Messy’, not linear and deterministic” (Black Sky Thinking 2016).

In her new book, developed in collaboration with TED, *Vibrant Architecture* she explores new future perspectives on structures that are living and breathing. Based on her work in experimental chemistry, she wants to encourage not thinking of modern buildings as inert structures anymore. She aims to create new types of biological and metabolic building materials that turn buildings into living organisms. In a lecture series led by Liam Young in his Under Tomorrows Sky project, she explains:

“We are living in the age of synthetic biology which means that we can build organisms from the bottom up, using life building blocks. [...] My work looks at how synthetic biology can be

used in built environment and the basic idea is that biological-like processes help our buildings become less like machines and more like nature” (Armstrong June 16 2013).

One of her main technological inventions is called ‘Protocell’ technology, which has considerable possibilities for design applications. She explains:

“Protocells represent and embody the convergence of natural and artificial systems. They are characterized by their striking life-like qualities, which potentially have great value in design as they represent a platform that is simultaneously “natural” in terms of its emergent spontaneity and also their artificiality since they are partly designed and deliberately constructed. Such contradictory qualities may be meaningfully employed as agents of design when their properties and interactions can be choreographed through deliberate interventions” (Armstrong 2014: 460).

According to Armstrong, we are witnessing the emergence of similar technologies resulting from synthetic biology like smog-eating shell structures or self-regenerative concrete. These technologies exist and are presently implemented. The traditional conception of architecture would not be able to process these developments because it demands a new way of dealing with materials and it refocuses the designer’s perspective. For this transformation and engagement with the extensive problems of the Anthropocene, architecture needs to deal with this idea of living materials or ‘vibrant materiality’:

“It is time for a new vocabulary. Words that invoke physiologies will come into play, as we talk of buildings with circulation rather than drains, with breathing systems rather than vents. The language of design must change” (McClelland 11 May 2016).

With Vibrant Architecture, Armstrong embarks on the task to develop such a language for a re-conception of built environment. Vibrant architecture is based on the work of Jane Bennett on Vibrant Materialism. Bennett drew on the work of Bruno Latour when she coined the phrase ‘Vibrant Materialism’. Like Latour, Bennett argues for the inclusion of ‘actants’ – bodies, human or non-human, that have the ability to influence their surroundings.

“[...] if materials are lively, then specific qualities relevant to heterogeneity, entanglement and vibrancy need to be incorporated into a practical design approach – to underpin the evolution of our cities” (Armstrong 2012: 66).

Armstrong includes the vibrancy of materiality through her understanding of the soil.

“Earth was not ‘born’ with soil but has acquired it over the millennia. Soils are a living web of relationships within complex bodies that will eventually grow old and die. [...] The possibility of artificially engineering soils creates the opportunity to transform artificial landscapes into places that can attract nature” (Armstrong 2012: 6).

According to Armstrong, Architecture has the potential to create soils, synthetic matrixes that provide the infrastructure for an evolving web of human-made or natural life forms. In a synthetic ecology, culture and technology become intertwined with Nature. The production of architecture is to create new soils. She states: “What separates a building from soil is simply time”.

“Architecture has the power to become a site of ecological regeneration. Its sheer scale rivals another naturally produced body that supports life – the biotic soils. The architecture of soils promotes life, diversifies ecologies, recycles resources and propagates globally. It embodies a ‘deep’ ecological model that may be applied to the design of the built environment. [...] (Armstrong 2012: 7-8).

To induce a way of thinking based in recognition of complicated entanglements means integrating material and non-human actants and accommodate other life forms such as microbes. In the production of soils, an ecological community encompasses all actants. In speaking about Future of Venice project, she explains herself:

“So for me, these are the sites for which there are new opportunities to change the way that we build and build as a community in which construction is not just a single act but something that goes on forever. The big question is “what is the community in the future?” I do believe in an ecological future, but I’d like to know if we are going to accommodate other life forms. What kind of status do they have? If you think about your own body, you find that you’re not 100% human; 90% of your cells are actually bacteria. If you look inside your own cells you find traces of ancient viruses and bacteria. You’re not pure, and yet we have this cultural conditioning that there is a single ego. [...] So, I think it is time for us to re-evaluate what it means to be an ecological human” (Under Tomorrows Sky 2013).

5.2 The application of Protocell Technology (2010-2014)

Armstrong's protocell technology is visualized and applied in two projects; both are the result of collaborations with other architects and designers. The first visualization is the *Hylozoic Ground* project. Armstrong presented protocell technology together with Toronto-based architect and sculptor Philip Beesley at the Venice Architecture Biennale 2010. Together they developed an immersive interactive installation, named the *Hylozoic Ground*. The title referred to 'Hylozoism', a belief that all matter has life (Beesley 2010). They described the project as:

"[...] a suspended geotextile that gradually accumulates hybrid soil from ingredients drawn from its surroundings. Akin to the functions of a living system, embedded machine technology allows human interaction to trigger breathing, caressing and swallowing motions and hybrid metabolic exchanges. [...] 'Living' chemical exchanges are conceived as the first stages of self-renewing functions that might take root within this architecture" (Dezeen 27 August 2010)



Figure 7: Pilip Beesley and Rachel Armstrong, Holozoic Ground project (2010)



Figure 8: Philip Beesley and Rachel Armstrong, detail from Holozoic Ground project (2010)

Images 7 and 8 show the installation. The installation represented an artificial forest, built of a lattice of small transparent acrylic tiles. The technology provided the basis and materials for the entirety of the installation. The project featured glass-like transparent materials, in gray and white. The colors scheme referenced its technological and digital fabrication; however, the movement, shape, and reactivity gave the installation an organic feel, alluding to the idea that the installation was ‘living’. Visitors were able to walk through the artificial forest and touch the digital whiskers, fronds, and filters, which moved and breathed in response to their presence. Lightweight microprocessors, sensor technology, and mechanical joints covered the installation, which allowed the structure to ‘feel’ the moisture and organic particles in the air; the structure moved in response to its environment. The technology, shape, and movement together, produced the effect that the forest seemed to be living. The immersive scale and fragility of the installation gave it a mystical aura, enhanced by the emphatic reaction of the technological components.

The book *Vibrant Architecture* featured another application of Protocell technology. In this book, Armstrong argued for merging the natural and material world through design interventions. The ‘Future Venice Project’ featured urban structures of the city of Venice standing on top of a limestone reef. Armstrong claims:

"It's a different way that we could use technology – one that confers inert materials with some of the properties of living things. [Venice] could engage itself in a struggle for survival against the destructive impact of the elements in which it is situated" (Dezeen 17 August 2010).

According to Armstrong, the future of Venice depends on its relationship to the tides. Venice is built on wooden piles sunk into a lagoon. The tides digest away the underlying foundations of the city. In response, Armstrong wants to create an artificial limestone-like reef that could spread the point load of the city over a much broader base. The sheathing of limestone is subsequently to be transformed into artificial coral reefs (Dezeen 17 August 2010). These supporting piles can be coated in limestone, of 'petrified' through a process based on Protocell technology that can help avoid the further subsiding of Venice. This is an example of how to turn 'dead' material into living structures. The protocell technology allows the compounds to create simple metabolisms, which would allow them to perform as if they were alive. The first metabolism exists because of the photophobic characteristics of the materials so that they move towards the darker areas and deeper-lying woodpiles beneath the city.

In images 9 to 11, Armstrong juxtaposes designed structure with the natural environment. The designed structures in the built environment are indicated by the straight lines and angles featured in the buildings (Figure 9; Figure 10), emphasized by the ornamental features in the window frames (Figure 11) and the tower structures (Figure 10). The limestone's surface is less smooth and has crevices and rough edges, indicating that it grew naturally (Figure 11). The water features water plants and coral, again indicating the presence of organic entities. In figure 8, Armstrong shows how the pillars upholding the city merge into the building material. The similar gray and yellow(-ish) color of the building and the upholding structure, indicate a shared materiality. The supporting limestone does not appear naturally but is placed there strategically through Armstrong's design interventions. Thus, Armstrong makes a statement about the merging of the (non-)organic and human-designed world. Ultimately, all aspects have an element of design to them, despite their natural appearance. Concerning the spatial organization, the underlying structure and buildings are represented in similar size. There is no clear demarcation and the two domains merge into each other; however, the limestone functions as the support for the building structures and does not have a clear function without the structure.



Figure 9: Rachel Armstrong, protocell technology, visualization by C. Kerrigan (2014)



Figure 10: Rachel Armstrong, Future of Venice Project, visualization by C. Kerrigan (2014)

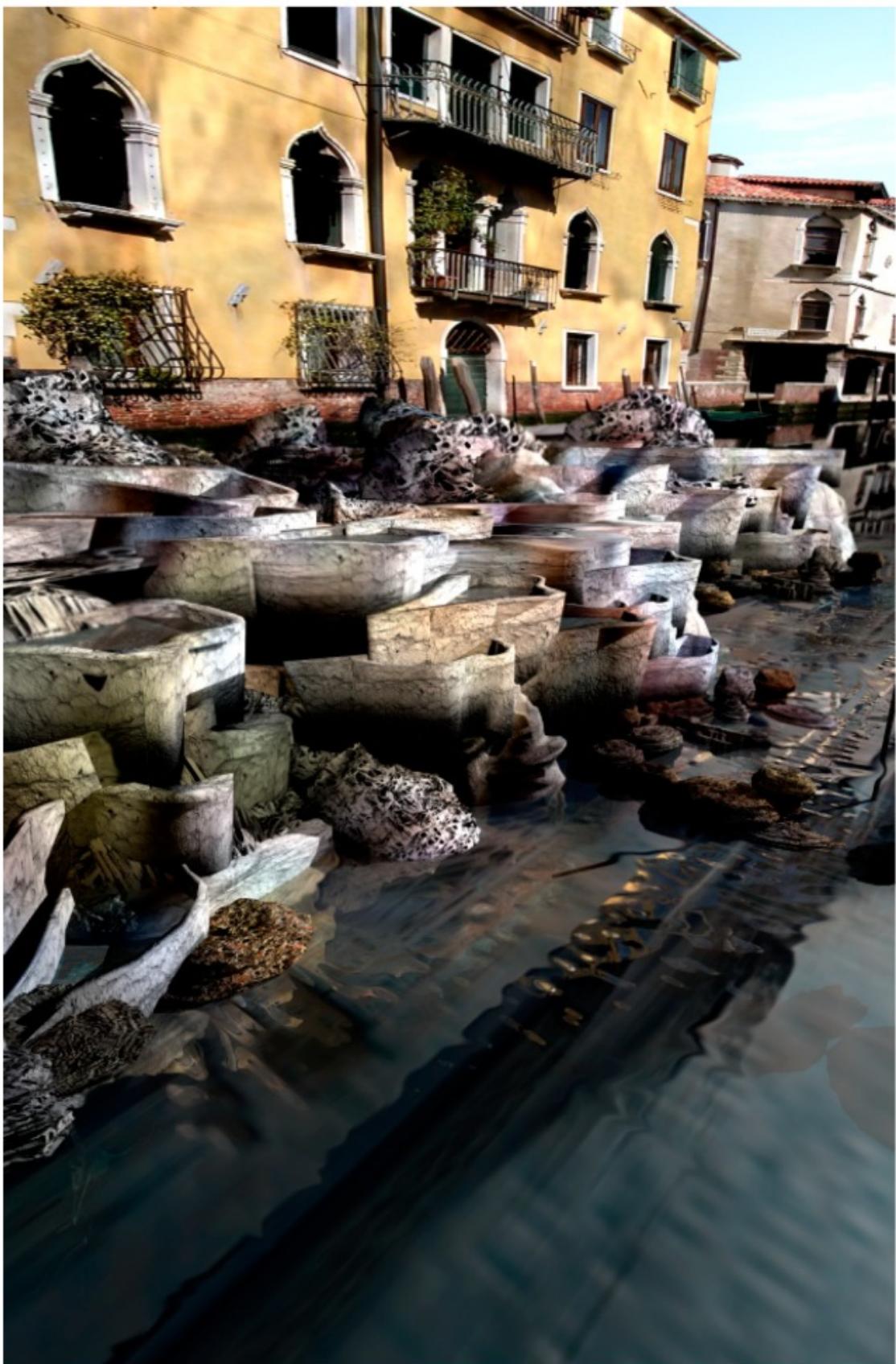


Figure 11: Rachel Armstrong, Future of Venice Project, visualization by C. Kerrigan (2014)

5.3 Interpretation

As a scientifically trained architect, Armstrong speculates on technological developments. She thereby is a speculative designer. Speculation must anticipate the problems of the Anthropocene through technology. Her way of thinking forward is embodied in her practice of ‘Black Sky Thinking’, which promises to make a speculative leap into the future by radically reframing today’s issues and exceeding the limits of our imagination. Armstrong makes a positive stance on the future of the Anthropocene when she replaces the notion with the word ‘Ecocene’. By using a new term, Armstrong wants to explore alternative realities and offer radically new visions.

Her radical and promising visions are based in re-synthesis of the natural, human and material domains. In her acclaimed TED Talk, she states: “I believe the real response to climate change is to create buildings that can heal the environment”. Designing healing architecture sounds like a stretch. Her farfetched design projects are the result of her practice of Black Sky Thinking, in which she actively tries to imagine radical new futures. She thereby articulates how the radical potential of architecture in the Anthropocene lies in his/her ability for *speculative fabulation*. The architect has the potential to revise our present way of thinking about the Natural world and the Anthropos.

In doing so she positions the non-human world as a user of her architectural design. Although Armstrong’s design projects incorporate Nature, *all* elements include an aspect of design. Her architectural practice is, therefore, one of synthesis. She merges the natural domain, which emerges spontaneously, and the artificial domain designed by humans. The natural structure of the reef is created through design interventions. The natural world no longer exists as a context but is transformed into resource and asset. Organic growth is subsumed into the design process. She thereby changes her understanding of Nature and Technology, merges the two into a hybrid understanding.

Architecture can provide a base for new nature in the post-ecological sense, e.g. when Armstrong uses architectural structures as soil to further life on this planet. She effectively dissolves the boundaries between the natural and human domains by creating ‘living’ materials in Future Venice Project. In the project, she works with naturally occurring processes like the rising sea tides by which she can bring about a matrix for the development of other life forms. By designing buildings that provide the matrix for the continuity of life, she reconstitutes places of refuge for all life forms, most visible in the production of the vulnerable coral reefs. Architecture thereby is also placed in the service of non-human life forms, strengthening sympoetic bonds between the species. Thus, she adheres to a practice of ‘Making Kin’.

She tries to renegotiate the place of architecture between the organic and structural, thereby creating a new architectural language. She revises the division lines between the natural and

human domain by explicating the ways that they have always been connected, which legitimizes her practice of synthetic biology. Her work entails the production of soils; Soil, she argues, is the matrix for the development of all life, whether it is human or non-human. This is a significant shift because the discipline no longer works merely for humans, but also for non-human entities. This entails architectural design in the service of nature or even the inorganic world.

Similar to Liam Young, the Anthropos is represented as technology. In Armstrong's projects, technology mediates human influence in the natural world; this relates to the Naturalist narrative when she presents scientists as the safe-keepers of the planet or the Post-Nature narrative when she celebrates technology for its potential. Her designs elevate science and technology, which represents an ambition of the mastery of Nature. She thereby adheres into the second Post-Nature narrative. Vibrant architect Armstrong solves the problem of the subsiding of Venice through architectural intervention, thereby celebrating the capacities of her as an architect. Technology can salvage what is left of the natural world.

Her approach to the Anthropocene builds on the Post-Nature narrative because wants to intervene in the natural world with technology. However, in her understanding of the temporal trajectory of the Anthropocene, another narrative comes to the fore. Similar to Donna Haraway, Armstrong explores competing alternative realities of the Anthropocene. By opening up the imagination, Armstrong aims to offer new understandings of Anthropocene realities. She diverges from giving one sweeping Anthropocene storyline. Her approach is, therefore, more closely related to Haraway's notion of the Chtulucene.

Thus, Armstrong's understanding of the Anthropocene is both related to the Post-Nature narrative and the Chthulucene. She claims a new understanding of the interconnectedness of the human and non-human domains of Earth. Or rather than creating new stories, she shows the multiple-faceted and complex stories that are in existence already. By imagining a post-natural world she provides a second example of Speculative Fabulation in architectural design.

Armstrong positions the architect as the facilitator for a process of hybridization; in facilitating the merging of many separated domains, she argues that the architect is an asset in inventing new worlds. In her work, she tries to invent radically new approaches, expressed as *living technology* and *vibrant architecture*. Arguably, she is optimistic about the Anthropocene; regarding spatial organization and focalization, she incorporates a sentiment of hopefulness and understanding in her images. She emerges the visitor of the exhibition in her project and gives the viewer of the images a position from *inside* Venice. She thereby refrains from posing critique but promotes a temporary immersive understanding of her new worldview among the visitors or viewers.

Chapter 6: François Roche and Stéphanie Lavaux

The third example is provided by Paris-based architectural duo François Roche and Stéphanie Lavaux, co-founders of the architectural studio New-Territories, formerly known as R&Sie(n) architects. New-Territories was invited in multiple Biennales of Architecture in Venice, the Biennial of Architecture in Chicago and the Biennial of Istanbul.

After graduating Roche and Lavaux, partners in both their private and professional lives, set up a joint studio in France. From the onset, they have tried to blur conventional boundaries and limitations in architecture. Their organic oppositional architectural projects are concerned with the bond between building, context, and human relations. The studio aims for projects that go against the mainstream or contemporary architecture; Roche and Lavaux were pioneers in the introduction of computational technologies and hybrid architecture. Their approach is anything but formalist. Their designs often times seem intentionally bizarre. It is hard to abstract a typical style and all designs are idiosyncratic and strongly context-related.

Roche and Lavaux's discourse on architecture in the Anthropocene is derived from the following sources: Bauntetz published a profile and interview on R&Sie(n) in 2012, titled "Crystal Talk: François Roche - R&Sie(n) Architects"; an interview included in Etienne Turpin's 2012 book *Architecture in the Anthropocene* titled "Matters of Fabulation: On the Construction of Realities in the Anthropocene"; Archdaily published a blog post on the project Waterflux in 2008, written by Ethel Baraona Phol; an article published in Architectural Design in November 2010, titled "(Science Fiction, Ecosophical Apparatus and Skizoid Machines: Animism, Vitalism and Machinism as a Way to Rearticulate the Need to Confront the Unknown in a Contradictory Manner"; and lastly, the project descriptions on the website of New Territories.

6.1 An architecture of non-determination

Roche and Lavaux place emphasis on hybridity, collaboration and an interdisciplinary approach in their practice. Together with programmers, biochemists, and Nano-technologists they form an interdisciplinary think tank that forms the basis of their designs. Moreover, they are secretive about their own appearance and don't their work to be associated with one person, thereby critiquing the celebrity culture in mainstream architecture. An avatar (a hybrid design combining the face of Roche, Lavaux and other collaborators) gives a face to New-Territories, to differ a sense of creative authorship. Moreover, the name of the firm is annually revised.

As architects, they are highly self-critical. They consider the architectural role as one emanating from uncertainty, through provisional processes and forms in which animism, vitalism, and mechanism become directions for change.

“We have lost what it means to be an architect; we have lost this notion. It does not mean constructing a building. Many people construct buildings, but are they necessarily architects? No! So why are we architects? To define a political-aesthetic condition of construction where we produce something in order to destabilize the habits of a situation” (Cornell journal: 204).

In an interview with Etienne Turpin, Roche critiques the discipline:

“It is terrible how the last 10 years were dedicated to the success story of the last architect making the tower in Dubai. It is funny, but look at it now—the field is entirely impoverished! [...] There is the mainstream image of architecture, which is as univocal as a slab of concrete. Architecture then becomes a global lamentation with a univocal voice, without any care for singularities, other practices, or other ways of conducting our practice in the world [...] The attitude of the smart architect today: working every day of the week, all the time, never considering societies other than their own, never trying to denounce the new economic imperialism or the situation of the system; finally, step by step, this disqualifies architecture, its potential for narration, and its potential for acting. Architects are no longer acting in society; they act within their field with incredible knowledge about new tools and with a remarkably self-referential expertise, but no one wants this knowledge outside of the field of architecture” (Turpin 2013: 201-202).

Going against the grain of the mainstream, their own design approach for Roche and Lavaux represents a “narrative practice”; they work under their motto of ‘Practice as fiction’ and “Fiction as Practice”. They use speculation as a strategy to avoid the constraints of formalism in their design approach.

“It is practice as fiction, fiction as practice, speculation, research. It is polymorphous. It cannot be broken down to just one element. It is about thinking that reality is also partly fiction. It not only consists of what we see but at the same time hides another reality, a dream of phantasm. [...] We are interested in the question of how we can develop aesthetics from this. As such, reality becomes a narrative strategy” (Kietzmann 2012).

The architectural firm produces what it calls *protocols*; these often involve video productions and installations. These protocols are a mix of narration, scientific data and emerging technologies, visualized through digital speculative future scenarios. With these, they attempt to articulate the

real and fictional links between geographical situations and the narrative structures capable of transforming them (Cornell Journal: 17). The designs are situated between what is fictional or real but also the sane or mad, which makes their designs often quite frightening. Their designs mostly include a critical socio-political stance by imagining on a future utopia/dystopia vouched by scientific research:

“[Utopia] was not a projection into the future, but a possibility that existed then, in a different place. We have always been interested in this kind of utopia. [...] Our form of utopia is based on speculation. We visualize a specific future scenario and aim to approach it with the help of technology and through collaboration with scientists” (Kietzmann 2012).

Roche states on their website that they look for scenarios of hybridization, grafting, cloning, morphing. These give rise to the perpetual transformation of architecture that strives to break down the antinomies of object/territory or object/subject. They use speculation and fiction to renegotiate the place of architecture in post-capitalism.

“[the designs] help us to renegotiate a relationship with the arrow of time; some of them are directly producing reality, here and now, as an industrial factual protocol; some of them are fictionalizing our practice, by reformatting the protocol of production, for a tomorrow reality; and some of them are used as a speculation to magnetize a point in the future. [...] In this way, these apparatuses appear through an architecture that seems to come from a transitory strategy: from an operative, fictional and speculative scenario, which rearticulates the relation of a situation with an environment and eventually its own unreality, re-questioning the values of its identity.” (Roche 2010: 70).

Roche and Lavaux explicitly consider their architectural identity as an unstable concept; this is related to their conception of architecture as something that includes uncertainty and non-determination in the design process (Cornell journal: 17). It is because of this instability that they found a strategy to engage with a future that is malleable.

In their work “nature’ holds an important position. However, they offer strong critique on the sustainability discourse which Roche argues to architecture’s involvement in ‘green-washing of global merchandise’ (Turpin 2013: 201). Roche argues that sustainability once was a so-called “weak-position”, which has now become a dangerous problem in mainstream architecture:

“It became a décor of taking care of nature; it became just a green façade. It was then only a stereotype, the merchandising of architecture as a simulation of weakness and cooperation. But nature is monstrous! [...] to use nature as décor, to simplify in this way, is a kind of domination through domestication. It produced a kind of Disney Land World Fair of architecture justified by pseudo-ecological values. I am very worried by that. I think we have to keep intact the intrinsic conflict in nature, especially of our own nature. But for architecture, nature is typically conceived as a peaceful thing occasionally afflicted by catastrophes.” (Turpin 2013: 200)

Instead, they produce buildings with an inherent sense of ecological danger and uncertainty, thereby elevating the consciousness on global problems. Their concept of “spoiled climate” architecture links the human body to the body of architecture by a re-scenarization of natural worlds. Roche and Lavaux define their work as temporary forms in which the human and biological become one dynamic entity; hence their products are unstable and often provocative. François Roche and Stéphanie Lavaux are featured in three projects between 2008 and 2009: the project “I’mLostInParis”, “waterflux”, and “Symbiosis’ Hood”.

6.2 Project “I’mLostInParis” (2008)

The project ‘I’mLostInParis’ (2008) illustrates R&Sie’s taste for provocation. The project features hydroponic bacteriological windows with glass bulbs hanging against the building façade containing aggressive bacterial cultures. The bacteria would cause some of the surrounding plants to die off, a common natural phenomenon. Roche explains: “This is not a form of ecology that comes from Disneyland of benefits the middle classes” (Baunetz 2012). The idea was to blur ‘natural’ boundaries in architecture, through the dynamic fluency and interactivity of the substances.

The first project, ‘I’mLostInParis’ features a wall covered in plants and glass bulbs in the shape of fruit in a housing structure made of concrete and glass. Wires connect the glass bulbs, which contain a fluid. A large window provides access to a yard with organic walls. The color-scheme consisted the color green, referencing the organic basis of the plants, and gray and white indicating the building structure. The glass bulbs function as a mediator between the in- and outside, the natural and human realm; both effectively come together in the design project. Concerning spatial organization, the house features as the context for the green wall. The building functions as a way or framing Nature or a way of experiencing and looking at the organic wall.



Figure 12: New Territories, I'mLostInParis (2008)



Figure 13: New Territories, I'mLostInParis (2008)

Thus, Roche and Lavaux use architecture for its users to gain better understanding the natural world by framing processes in the natural domain. The second project further underlines this.

6.3 Project “Waterflux” (2008)

The project “Waterflux” was designed by Roche, Lavaux and Jean Navarro for client Maison des Alpes in Évolène, Switzerland. It consisted of a rather monstrous looking building for an art museum and alpine research studio, serving as an information center on the shrinking of the glaciers. Its location was a site which only 20 years ago was still covered by glacial ice. The structure is built entirely from wood sourced from the surrounding forest. The wooden tentacles were designed to retain snow in winter and due to the structure’s shape, its appearance completely changes with the seasons. In summer it is naked and visible and in winter is disappears into the snowy background.

The context of Switzerland took an important position in the design. The isolated village of Évolène is located in the Alps at an altitude of 2,000 meters, counting a mere 2,000 inhabitants. One of the local traditional holidays is a specific form of carnival, in which public space becomes quite a violent place. For three consecutive days inhabitants wear monstrous wooden masks and beat each other. Roche and Lavaux wanted the building to resemble these masks. While the carnivalesque masks traditionally served to drive out winter, the museum would do the same for global warming (Baunetz 2012)

‘Waterflux’ features a structure made from a brown material covered in lines and spikes, standing in an organic environment. The building stands between mountains, on a surface of grass and water; its image is reflected on the water surface. The building has a non-traditional, disturbing appearance. Wooden spikes and wires hold the structure together; large green organically formed windows provide access to the structure. It is difficult to understand the scale and form of the design if it were not for the people standing inside one of the windows. The building changes of appearance in winter (although this is not visible in the images). Again, the building functions as a way of experiencing the local environment; in this case the processes of the changing of the seasons, local climate change and anthropogenic impact, and the cultural traditions which are tied to the locality of the city. Roche and Lavaux enable these experiences by mirroring the natural environment in the design of the building.



Figure 14: New Territories, Waterflux (2008)

6.4 Project “Symbiosis’ Hood” (2009)

The last example is the project “‘Symbiosis’ hood” in South Korea, built in 2009 for two clients, Julieta and J.J. Lee+Pablo Lee. The scenario entailed a vision of how to blur the boundaries between two properties, one public and one private space.

The result was two interlocking spiral-structures, one clear and one green and fuzzy with twisted and blurry boundaries. Together they form one building at the interior edge of a forest

and a cliff. Again, there was a strong discursive connection to the location of the building. The design incorporated the story of the territory that is located at the border between South and North Korea. Land mines tarnished the land, which was subsequently abandoned at the end of the Korean War. Because of the military situation, a non-domesticated nature emerged with new species of insects, trees, and plants. R&Sie claimed that because of the historical ‘diseased’ location nature was able to redefine its rights as monstrous uncontrolled entropy.



Figure 15: New Territories, Symbiosis (2009)

The project featured a structure in the middle of a green environment. The structure leans against a mountain (figure 13). The building’s biomimetic morphology was exemplified after termite mounts. The ‘fungus cavern’ featured an exhibition space and a domestic space located in the extrusions into the ground. The structure does not have a traditional appearance. It remains unclear where the entrance is located, how the building is structured into rooms with distinctive functions, et cetera. Only figure 14 gives more insight into the building’s interior. The building’s interior has an entirely different appearance. The surfaces are smooth, in tones of gray and white. Light comes in through the windows, which provide outside views.

Concerning spatial organization, the organic environment features as the context of the building. It is difficult to distinguish the building from the context; both merge and spiral into each other (figure 15). The color green indicates an organic grass-like material that makes up for a substantive part of the building’s surface. The grass material is juxtaposed with glass surfaces, although they appear in similar shapes. The organic environment is integrated in the structural features of the building. In spite of the glass windows, organic materials cover almost the entire

shell of the building. The last project too indicates how Roche and Lavaux try to transgress traditional boundaries, by merging architectural design with the organic environment. This is expressed in the organic materials, the color schemes and use of organic shapes.

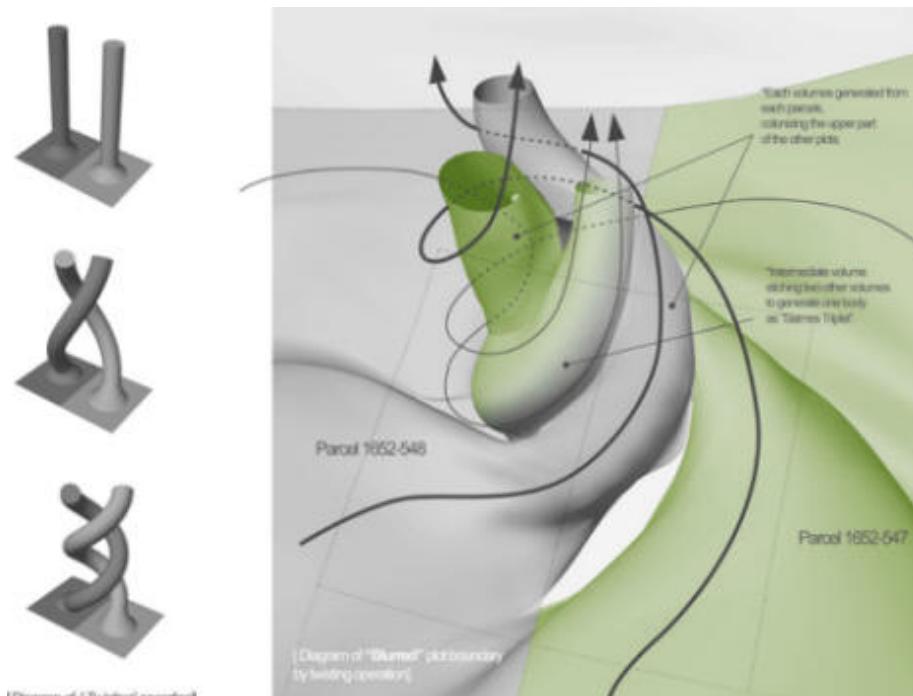


Figure 16: New Territories, Symbiosis (2009), Spiral Structure.



Figure 17: New Territories, Symbiosis (2009), interior.



Figure 18: New Territories, Symbiosis (2009), Exterior window.

6.5 Interpretation

Initially, Roche and Lavaux do not project future scenarios. They do not speculate on possible developments; however, by emphasizing and visualizing a history of Anthropogenic impact, they implicitly tell the story about a future in which these processes continue to exist. They imply future scenarios of further anthropogenic impact and biosphere destruction.

They refrain from giving solutions or configurations of a nature-after-nature. They want to expose the ideas behind our conception of Nature, e.g. by claiming that Nature is inherently violent and disruptive. In “I’mLostInParis”, Roche and Lavaux move away from the idea of natural preservation in ‘green architecture’, thereby denying the notion of nature as something harmonious and pristine. Instead, with his schizoid machines, claims that nature is inherently violent and dangerous. The “I’mLostInParis” project is an example of how they try to renegotiate the meaning of Nature in an increasingly inhospitable world. Thereby, they challenge Anthropocene narratives; by showing that Nature itself is destructive and inharmonious, they deny that we have to preserve a pre-existing Nature.

Conversely, their practice as fiction forges bonds, between nature and design, between toxicity and health, between divided locations. Roche and lavaux move between qualities of toxicity and health, natural and human, organic and non-organic. Thus, projects like “Symbiosis’ Hood” and “Waterflux” deconstruct most ‘natural’ dichotomies and boundaries, as illusions created by human intervention.

François Roche and Stéphanie Lavaux give examples of how architectural design can have a degree of advocacy. However, they themselves do not claim to have a single catch-for-all solution. The design of the buildings strengthen the connection to the stories of the location, e.g. on the diminishing landscape and local cultural traditions. The projects thereby promote the elucidation of the causes of the problem that ensue in the area. In doing so, they aim to raise consciousness on environmental issues and anthropogenic destruction. Moreover, with their practice of speculative fabulation and their emphasis on the context they show that the world is comprised of stories: stories that are capable of reconfiguration and stories matter for the earth. Architects can bring stories to consciousness. These stories are thus uncovered and put on display through architectural design.

Roche and Lavaux produce architecture with regard for the interconnectedness of contextual processes when building or inhabiting a structure. They create new stories about forging bonds divided domains. When studied more closely, the distinction between Nature and the Anthropos cannot be held in place. The work of Roche and Lavaux offers critique of all divisive systems of thinking; they simultaneously attack the categories of human and Nature, but also between the species, races, organisms, et cetera.

Because the images in the design projects are sometimes confusing, Roche and Lavaux refrain from giving an all-encompassing paradigm regarding the current state of our environment and the planet. Thereby, they effectively problematize the Anthropocene by placing emphasis on the importance of *positionality* and the inevitability of subjectivity. Roche and Lavaux, therefore, do not make claims about a new temporal trajectory of the Anthropocene but illuminate existing Earthly bonds, which can induce new ways of looking at the past, present and future. In short, they offer new perspectives on the world through architecture. The buildings are in the process of being realized; however, they also initiate new discourses on human, Nature and the planet. Again in their work, the Anthropocene is understood as *Cthulucene*. Moreover, they do favor the human species; they work with and for a thick web of different life forms, interconnected by stories.

Conclusion

The debates on the Anthropocene indicate that we are living in a period of anxiety and existential uncertainty. It represents a growing awareness of the fragility of the world's ecosystem. Rather than just a scientific descriptor, the notion of the Anthropocene serves as an ethical injunction to think critically about human and non-human agency in the world. It challenges us to rethink our understanding of what it means to be human or what we think of as natural. The Anthropocene is not only a seismic temporal shift in the history of the planet, but it also provokes a vision of the end of history. It faces us with a universe that's hostile to us, threatening with the disappearance of humankind.

Now, architects are facing the Anthropocene. It represents a seismic cultural shock and its after effects are also felt in the field of architecture. In architecture, the notion of biosphere destruction enables new perspectives. The Anthropocene thesis urgently asks architecture to review its place in the broader socio-political and cultural context. However, due to the hermeneutical spider web surrounding the discipline, change will come neither quickly nor effortlessly. The discipline tends to lag behind because it clings on to its own history; it is what Jacques Derrida called the “architecture of architecture”, a historical chain of builders and buildings that constitute an *a priori* set of rules and thoughts about architecture.

At this moment, architects are engaging with Anthropocene science in a productive and interesting way. In the three case studies, I inquired into the ways that the architects ‘read’ the Anthropocene and integrate these discourses in their designs. Moreover, I related this to their values, ideas, and beliefs behind the representation of the geological notion. The case studies represent the ways of ‘dealing’ with the notion for architects.

Architects as storytellers

As in other Anthropocene debates, different visions on the Anthropocene underwrite distinctive political arrangements, ideologies, and environmental policies. The scientific descriptor proposes a singular temporal trajectory but relates to a range of other time paths with various outcomes. When the discipline of architecture engages with geological science, it must be aware of the stories it projects. Furthermore, there is a pervading new reductionism in the field of architecture which ‘green-washes’ design practices under the veil of ‘green consumption’. Green-washing architectural production is a way to domesticate the Anthropocene through design practices, which deflects criticism and affirms the status quo of the architectural field. Sustainability is not able to salvage the inherent crisis. The ‘sustainability game’ is inadequate and often adds to the already pressing issues of today’s environmental crisis.

Because of the inability for politics and other domains to promote change, design stories and visuals have begun to matter for the Earth. Through speculation or fabulation, the architects produce scenarios for futuristic bio-technical worlds, playing out possible timelines and affirming or inventing narratives on the Anthropocene. They can present images of dark urban futures or a worldview in which the organic is absent. Optimism or pessimism regarding the Anthropocene is indicated by the temporal developments included in the designs, proposing either a time frame of progression, apocalyptic decay, or otherwise.

The case studies all represent a new way of dealing with contemporary problems for architects, by turning towards speculative practices. Young Initially claims we don't need the work of architects anymore; however, he then turns towards the discipline of architecture for imagining better futures. Similarly, Armstrong and Roche and Lavaux actively look for better ways to be in the world. All three architects effectively visualize their stance on the Anthropocene in the following ways.

Visualizing the Anthropocene in architectural design

Anthropocene stories build on the concepts of Nature and the Anthropos, as was stated previously. References to Nature and the Human (which often includes technology) make up the most used tropes in Anthropocene narratives. By adopting visual references to these categories, architects can convey a storyline on the Anthropocene in their design projects. In constructing a narrative of their own, they make statements who and what has a role to play in Anthropocene futures. Thus, for architects to engage in debates on the Anthropocene, the visual language is important. I conclude that the visual language of the Anthropocene includes references to a range of binary oppositions. These include:

Nature - Human

Health – Toxicity

Green/Brown – Gray/Black/Purple

Organic growth – Design intervention

Natural environment – Built environment

Organic growth – Technological intervention

The way that these notions and colors are either juxtaposed or merged in the design visuals expresses the relationships between these categories. Their importance is expressed in the focal point of the design and in the way that they occupy the center or periphery. By using references to these categories in new and creative ways, the architects can deconstruct and change common understandings. In consciously employing and renegotiating the meaning of these binary oppositions, designers can construct a narrative on architecture in the Anthropocene. Young and

Armstrong visually merge the natural and human world through technology. Roche and Lavaux deconstruct the Anthropocene narrative by adopting visuals that deconstruct the discourses that the visual references invoke.

These architects build on narratives from Anthropocene scientists to predict future developments and anticipate disastrous events. It is the emotional response of audiences that gives architectural images a sense of advocacy, as displayed by Liam Young in his New City project. Young rejects his traditional role and advocates for the dissolution of the figure of the architect as a builder. He looks to find traction in other fields of activity and succeeds in doing so with his speculative practice. Young uses fiction to express polemic visions of the future; these cautionary tales of demise and chronicles of flaws must direct attention to the inconsistencies and inherent danger of the present, thereby inspiring environmental policies and public action. Similarly, Roche and Lavaux mirror the state of the environment in their designs. The problems that ensue are given an experiential basis because of their projects. Both Young and Roche and Lavaux use visuals to redirect focus to the environment.

Lastly, architectural design can help spread scientific discourses in the socio-cultural spheres. It can boost the communication between science and society, generate a richer public discussion in which the divide between science and the general public is bridged; it can help promote hard-to-grasp ideas about path dependencies through visualization of the urgent problems, thereby overcoming apathy or melancholy.

[Architectural narratives on the Anthropocene](#)

Anthropocene territories will require Anthropocene architecture (Zivkovic 2014: 104). However, we need to know what the Anthropocene is, before we can decide on the composition of its territories. The Anthropocene is a story about humanity. Based on the statements of the previous section, I analyzed which narratives the architects in the case studies employ. Moreover, it becomes possible to see what narratives they develop on their own. From these narratives, I gathered how they represent the discipline of architecture concerning the ethical responsibility for Anthropocene futures.

Most of the narratives argue for environmental intervention through design, otherwise they would argue for the dissolution of the discipline of architecture and the figure of the architect. This entails co-creating urban environments with Nature, in favor of hybrid socio-natural environments. The metaphorical connection between architecture and the Anthropocene is to blame for this. The Anthropocene is experienced and thought-of through architectural design; anthropogenic impact is most visible through built environment.

All of the architects in the case studies transform conceptions of Nature or help replace the idea of pristine and harmonious Nature with something closer to reality. Policies of conservation, environmental protection and the creation of novel ecosystems now create Nature on a global scale, which deconstructs the category of ‘Nature’ on which environmental preservation thinking is premised. The separation line between Nature and the domain of the *Anthropos* is thereby dissolved.

The architects position technology as a way of alleviating the pains of anthropogenic destruction. Technology is presented as heroically intervening in processes of planetary decay. The time frame of salvation through technology is optimistic, by it also lacks in significant critique. In Young and Armstrong’s conceptions of the Anthropocene, technology is seen as a bridge between the domain of the natural and the human. If the Anthropocene is an era of bonds between the human and the natural world, it is through technology. Similarly, in the designs of Young and Armstrong, the collective force of the *Anthropos* is represented as technology. They thereby claim that the Anthropocene is the age of Technology, the liminal moment in which technology becomes the major force. Because architecture heavily depends on its relation to new technologies, it is difficult to make a critical stance on the effect of technology. This evidently relates to the optimism of the Post-Nature narrative.

However, the architects in the case studies refrain from posting new all-encompassing paradigms on the Anthropocenes. On the contrary, they provide creative, polymorphous, and multiple smaller stories in a world that is complex and multifaceted. All are conscious of the importance of their imagination to move forward. They provide implausible and disconnected stories, small bubbles of reality, which can change the world in the larger scheme of things. This forgoes the Post-Nature narrative, but is more closely related to Donna Haraway’s claims on the Chtulhucene.

The social effect of the Imagination

The architectural imagination creates positions in the world. Architects design and build temporary, provisional standpoints from which one can view his or her surroundings. Thus, it becomes evident that in architectural design there is always a subjective position. Our outlook of the world is subjective, our home is one of many, and even one building has many windows. Because of the multiple and multifaceted narratives of architecture in relation to the Anthropocene, we must speak of Chtulhucene architecture.

The new responsibility of architects entails the use of fiction to invent new frames on reality, while staying attuned to the common storylines on the Anthropocene. This new practice of speculative storytelling through design gives the architectural answer to today’s problems; this

begins with governing Earth by *imagining* possible, more desirable scenarios. The new role of the architect is thereby one of *world making*. This is what Haraway calls ‘worlding’, or casting out propositions, languages and *ways of making worlds*. The architect’s creative imagination is an asset in enabling and promoting new images of *malleable futures*. Their designs projects can entail fanciful and extraordinary tales about unexpected and *unthinkable* futures. Our perception of the world always is a fictitious construction and knowing this means the realization of the importance of stories. To transform our perception of the world is to transform reality; architectural design can, therefore, create a cultural repository for the imagination. By harnessing the urgent pressure on the environment, the discipline of architecture can influence the scientific debates through generating a broader spectrum of the possible. This increases the importance of the architectural imagination.

Multi-species responsibility in the Chthulucene

The conceptual implications of the ‘stratigraphic gaze’ introduced by the Anthropocene are substantial for the discipline of architecture. It entails a realization of our situatedness in *Deep Time*, a non-human time frame, which helps us to understand the planetary effects of our actions. Thus, in the Anthropocene, we are becoming acquainted with Earth from a planetary perspective. Increasingly, we can see our lives from outside the planet. The comprehension of the aggregate effect of human activity as geological force challenges the architect’s concept of Nature. These categories have to be replaced because of the realization of a human and non-human entanglement. Anthropocene architecture produces socio-natural territories, or hybrid ontologies resulting from seeing architecture as stratigraphic object in deep time.

Chthulucene architecture places emphasis on interconnected emergence and the agential relationship between all Earth’s entities, and the fragile equilibrium in the biosphere. This relates to multi-species responsibility for architects, or what Haraway calls ‘*Making Kin*’. Because architectural production is the physical inscription of humanity in deep time, it has the potential to salvage or create *places of refugia* for life forms that are threatened in their existence (including our own existence). *Making Kin* can also be the explication of the present-day interconnectedness among different cultures, species, materials, et cetera. This entails that in architecture, the Anthropocene functions as a future projection of an imaginary community distributed across traditional boundaries - across nations, surpassing dichotomies like material/organic, human/nature. Their designs can be helpful in affirming, rethink or neutralizing the ‘old-world’ categories. This is what Roche enables with his telling of world-stories through architectural design. Armstrong, Roche and Lavaux claim that we are in need of *living architecture*, in cooperation with the natural, non-human or material world. According to these

architects, architecture is natural and nature is architectural. In short, architecture in the service of the assembly of species and non-biotic agencies can help ‘make kin’ amongst Earth’s entities.

The New Architect

Architects are watching out for unwanted consequences of the industrialized and technological environment. They can raise the necessary public awareness to prevent these developments from going into unwanted directions. When an architect downplays the urgency of Anthropocene issues, he/she necessarily positions him-/herself in the debates on the Anthropocene. By claiming it's not all that bad, architects can naturalize the warning signs of environmental destruction. Raising public awareness is a new role that I henceforth will call the *architect-as-warden*.

This new role of the architect enables the *Anthropos* to experience the Anthropocene. The architect is an important asset in knowing what the future will look like because of his knowledgably and authority on urban development, technological development, et cetera. Therefore, he or she can protect society from getting off course in the face of fast-paced technological innovation. The main effort of this architectural role is to offer socio-political critique because they confront the public with future events. Their conduct of refraining from building is new. By emphasising the issues of the Anthropocene they do necessarily help us think forward.

Beyond the actual realization of structures, they argue for a conceptual energy that exists in speculative architectural design because of its ability to induce new ways of thinking. They offer resources for imagining new ways of ‘being in the world’, for other disciplines to draw from. This legitimizes architectural practices, notably the discursive design of Anthropocene territories and scenarios in the future. Because of way the notion of the Anthropocene redirects attention toward preferable futures, speculation, in general, is gaining significance. Because of the current system in which the discipline is embedded, this often times means that architects have to refrain from building. This is why they adopt new methodologies aimed at the public and political imagination. Speculative architects offer visionary directions forward in their designs, thereby sidestepping anthropogenic harm.

These roles are giving the architect a position in the debates on the Anthropocene, thereby enabling them to give the discipline a renewed sense of civic and environmental engagement. They can position themselves in these debates and a sense of scientific validation through the visual language that they employ. Anthropocene architecture is emerging as a new genre for the popular imagination of scientific discourse. Architectural visuals register and inscribe scientific data, to render information, communicate ideas or to form evidence on the existence of the

Anthropocene. Vice versa, integrating scientific discourse in their designs by architects lends new authority to architects.

Questions and recommendations for further research

These developments in architectural design can be explained by an economic and environmental crisis. Architects in a down economy have to look for new ways to afford a living. When the economy of building starts to slow, it seems an appropriate time to start look forward. Questions would include: how is the increased degree of speculation in architectural design idiosyncratic for debates on the Anthropocene? Is there a similar development in general in a time when it is necessary to also look forward? How does the development as a response to the Anthropocene differ from general developments?

Another way of interpreting the case studies is that in architecture, there is an on-going revolution in materials engineering; it is constantly on the cusp of material and structural innovation. New developments range from translucent or self-regenerating concrete or integration of robotic technology. This naturally pushes architectural production into a realm of improbability and speculation and naturally leads to architects looking for ways to anticipate these developments. This would make the turn over to speculative practices less a conscious decision, but more a necessity to stay ahead of the curve. The material revolution also means that predictive models are equally promising as problematic. Science has reached a state of permanent speculation and the unpredictability of fast-paced innovation makes predictive models futile. The function of predictive models is diminishing, precisely because it is so difficult to imagine what the future will bring.

Lastly, it remains unclear whether these new roles for architecture in Anthropocene futures will continue to grow. Radical visualizations are potentially provided by other creative disciplines, like radical arts or science fiction. Because of the close proximity of architecture to other disciplines, like storytelling and fiction writing, architects have the opportunity to move into these other areas of production. Moreover, Architects have a degree of authority when it comes to built environment and the transformation of space. For creativity on the largest scale we turn to architecture; arguably, it is, therefore, the prime discipline for discussing new futures.

Closing statements

In the Anthropocene it becomes clear that we do not inherit the planet from our ancestors; we borrow it from generations that are to come. Anthropocene scientists make certain truth claims that cannot be ignored. The narratives of the Anthropocene propose a discourse that replaces all other referent systems. Because of the rhetoric of demise and the apocalyptic prospects, now the only things that matter are the survival of the human species and the resilience of the biosphere.

The way we construct this all-encompassing system of thought can have calamitous effects for the planet, when it leads to a public attitude of melancholy or yield the need for action. We are obligated to *think forward* and to imagine new and better futures. We are in need of new perspectives on humans and the planet to make the biosphere more resilient and lessen the damage of an *Anthropos*-centred worldview. Anthropocene architecture can help promote such thinking. A geological turn in architecture invoked by the notion of the Anthropocene, can lead focus away from the apocalyptic prospects.

Thus, the Anthropocene demands a new way of looking at the discipline of architecture. It is clear that architects have the ability to change the trajectory of the Anthropocene and are thereby endowed with considerable power. Moreover, architects can irreversibly problematize a homogenous trajectory of the Anthropocene. Hence, there is political significance in these architectural designs because they can project future developments, influence debates, and steer socio-political intervention. It is up to architects to refocus and redesign a human future, to salvage ours and protect the existence of others on this planet.

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