

# TELLING STORIES ABOUT OUR FUTURE IN AN AGE OF CLIMATE CHANGE

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Can hopeful stories about a climate changed future, created with world-building,  
inspire moviegoers and serie-streamers and activate change in their behaviour?

AN ESSAY BY LISANNE FRANSEN

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*And it is not our task here to think only of one season,  
or of a few generations of men, or of one passing era of the  
world. We must put an end to this threat once and for all,  
even though there is no hope that we will succeed.*

Gandalf the Grey

Lord of the Rings - Book II, Chapter II, The Council of Elrond



## — Introduction: Before you start reading my essay

Dear reader,

Let me just briefly explain my background and my graduation project, of which this written essay has become an important part: an ongoing diary-like reflection on my goals and ideas, concepts, drawings and designs.

My name is Lisanne Fransen, I am a production design student soon to graduate from the Stockholm Academy of Dramatic Arts. The target audience of my research are professionals from the film industry: those who work behind the cameras, the filmmakers. To those who are about to read this essay and who are unfamiliar with the term *production design(er)*: a production designer is responsible for the visual look of a film or television production and contributes to the production by designing visual concepts, spaces, places, studio sets, props, graphics, (sometimes including costume and hair and make-up design). So a production designer shapes the world and the objects that surround and influence the actors.

My graduation project is called the *Pacific Patch People*. It is a (1) **research** project, (2) **world-building** exploration and (3) a **short film** packaged all together.

Next to the research, Pacific Patch People is a world-building project that tells a story about a future civilisation that settles down on the *Great Pacific Garbage Patch*. At the time of this writing, this garbage patch exists in reality yet it is a thin floating soup of ocean plastic - our own waste kept in place by ocean currents. However, as we are not (yet) able to reduce our consumerism and throwaway behaviour, in my future story the patch has continued to grow until it became so dense in some places that animals and people could start walking on it. And that is exactly what happens around the year 2070 when our world starts to deteriorate due to the many rapidly accumulating natural disasters caused by the fast-changing climate. Our world as we know it is now unhinged and disorganised with many people on the move to find a new place to live. Some of those *climate refugees* managed to set foot on the Great Pacific Garbage Patch and three generations later, around the year 2120, the Pacific Patch People have become a flourishing nation, and a society adapted to the new world with extreme weather landscapes. They are floating on the rising sea levels instead of trying to keep the floods away.

With the goal to explore this future world at the center of my two-year masters, I have done theoretical research of which you will read my findings further along here. These findings have influenced the practical side of my studies (creating a short film about this future civilisation) to a great and quite unforeseen extent.

So let's begin!



## — It is the Best of Times, it is the Worst of Times

Telling stories. One significant thing that separates us from the other animals on this planet, and perhaps the only thing we humans can actually be proud of.

Storytelling. It is something we humans thrive at. And we still develop it vigorously. I feel so excited to live in a day and age where storytelling, next to books, theatre and paintings, has taken the form of movies, TV series and games. An age in which immersive stories are created on a large scale, through huge vibrating team efforts, with mind-blowing traditional and digital techniques, and, most of all, an age in which all of these stories are so easily accessible to us.

It is the best of times!

Yet lately, I have been thinking that it might also be the worst of times.

I am devastated by the backstage facts and figures of how wasteful the film and television industry has become in their storytelling. It seems that the bigger stories we tell, the more waste we leave behind. **And that is not the only thing that makes me question our ways of today's storytelling. Are we not also telling the wrong kind of stories about our future, for the wrong reasons of merely entertaining us with dystopian narratives?**

All these thoughts make me feel hopeful and desperate at the same time. As a great storyteller once started his story, I would like to start mine in describing the duality I feel with the same words: It was the best of times, it was the worst of times, it was the age of wisdom, it was the age of foolishness..."<sup>1</sup>

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<sup>1</sup> Charles Dickens, *Tales of Two Cities*, London 1866, p. 1

## — A Triple Challenge

In November 2019, my teacher and professor in Design for Film and Media, Eli Bo asked me to present my research at one of her seminars during the autumn term. “Just tell us about your work and the research you are doing” she encourages me with glittering eyes, “and why you, as a production designer, want to create a climate-awareness project through film, one of the most wasteful industries of our time...”. The most wasteful industry of today... ouch... I know she is right, yet I feel a pinch in my stomach and an immediate urge to push back: “Yes, but it is also one of the most powerful industries of today. Being able to reach out to almost 20 million viewers with one show<sup>2</sup>, that is power!” She knows this of course, yet I felt the childish urge to uncritically defend my beloved film industry...

However, this conversation got me thinking: why do I as a production designer want to create another fictional stories about climate change? A genre also known as *Climate-Fiction*, or Cli-Fi, with a playful nod to the popular Sci-Fi genre. And why do I want to do this through the channels of one of most wasteful industries of today? That is quite contradicting obviously.

Well, first of all, climate change has always been my ‘battle’. I do not know why or when it started, but it feels like I have antennas that keep me constantly connected with this topic. Whilst engaging deeper and deeper in the film industry, I notice that most of the stories about climate change mainly present major dystopian, end-of-the-world scenarios. Showing us how humanity will be wiped out in one big blow and the earth entirely destroyed. Yes, according to the many scientific reports our failing to put climate change to a full stop and send it into retrograde is already a fact and accumulating climate changes are inescapably coming for us<sup>3 4 5</sup>. (How big or when, nobody knows exactly; multiple future scenarios are laying side by side on the table in front of us). Yet, none of these reports, as far as I know, mention that the majority of the human race nor the earth will be destroyed by one gigantic catastrophe like it does in popular movies such as *Days after Tomorrow*, *Water World* or *Interstellar*.

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<sup>2</sup> Here I refer to the finale episode of Game of Thrones in 2019, (HBO)

<sup>3</sup> IPCC, 2018: Summary for Policymakers. In: *Global Warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty* [Masson-Delmotte, V., P. Zhai, H.-O. Pörtner, D. Roberts, J. Skea, P.R. Shukla, A. Pirani, W. Moufouma-Okia, C. Péan, R. Pidcock, S. Connors, J.B.R. Matthews, Y. Chen, X. Zhou, M.I. Gomis, E. Lonnoy, T. Maycock, M. Tignor, and T. Waterfield (eds.)]. In Press.

<sup>4</sup> Kevin Loria, “The world could hit a tipping point that causes warming to spiral out of control — a scenario scientists call ‘Hothouse Earth’”, *Business Insider*, 2018-08-08

<sup>5</sup> Aria Bendix, “Scientists say these 11 major cities could become unliveable within 80 years”, *Business Insider*, 2019-10-16

Cognitive scientist Mark Turner points out: “Narrative imagining — story — is the fundamental instrument of thought. Rational capacities depend upon it. It is our chief means of looking into the future [predicting], of planning, and of explaining.”<sup>6</sup> So, following Turner’s thoughts, we thus need and must have imaginative stories about how our future world will look like in order to prepare for it. Why is nobody telling those kind of stories? Fictional stories that aren’t super dystopian but that follow the predictions made in scientific reports more veraciously and show us how earth actually might look like when the predicted changes start to take shape globally? And how we surviving humans will have to adapt to be able to live on in this changed landscape? Will they not make just as much money in the box office?

Maybe, I wonder, this is because it is so extremely complex to imagine a believable world heavily changed by multiple climate shifts. Or maybe, because we feel so overwhelmed with bad news about our planet’s future that it is just easier to imagine there will be no inhabitable world for us at all anymore. All or nothing. **Or maybe it is because stories about a changed future world would require first to remodel and create an entire new living world with new structures, new rules and adapted systems - and this would require extensive and collaborative research (that could take years) before hastily jumping into the storyteller’s focus of telling the stories about characters who live in this world.**

So there you have my second challenge. I want to create my climate fiction story in a different way than how it is done according to today’s ‘industry standards’, where films most often start (read: gets funded) with a written manuscript created by one or multiple writers. They are often character driven with a world shaped around them, the places where the characters walk and talk (the inside-out method).<sup>7</sup> But now, I want to do it the other way around, from the outside in. A method that creates the story starting with a living world, an imaginary world with its own set of designed rules, systems and structures. When all the work on this world is done, the doors will be opened for its inhabitants, and stories can organically be formed about how these people live in this specific world. However, I wonder: can stories be created this way in today’s film industry? When you show up with visuals of a ‘empty’ world in stead of with a written manuscript... is anybody wanting to support this deviant behaviour?

And thirdly as the film industry has become one of the most wasteful industries of our age<sup>8</sup>, just the content of the story is not enough. I feel obliged to create my cli-fi story as climate-neutral as possible. Because if I would create a climate story leaving a huge footprint behind, then what would be the point of doing so? Yet, I wonder, is this even possible?

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<sup>6</sup> Mark Turner, *The Literary Mind*, Oxford 1996

<sup>7 7</sup> Lecture by Tanja Bastamow on world-building in film, Stockholm Academy of Dramatic Arts, 2019-09-09

<sup>8</sup> Kaleem Aftab, “Emission impossible: Why Hollywood is one of the worst polluters” *Independent*, 2007-11-16

So there you have it: I am triple challenging myself as a production designer in the film industry.

Challenge 1: TELL a different kind of story on climate change

Challenge 2: CREATE it with the world-building method as a starting point

Challenge 3: PRODUCE it as climate-neutral as possible

## — CHALLENGE 1: TELL a different kind of story on climate change

### (1. Research)

#### **We All Go Down!**

“Vi människor ligger bakom de flesta av framtidens möjliga katastrofer.”<sup>9</sup> I rewind and listen again. It translates in English to “We humans are the cause of most of the future’s possible catastrophes.” I rewind again, and again and listen to that one little sentence: we, humans, are the cause...

I am hooked on a podcast series called P3 Dystopia, a podcast about “what happens when the worst happens”. ‘The worst’ meaning assuming the worst-case future scenario has the biggest probability to happen, and not the best-case scenario. When talking about climate change, multiple scenarios are often put on the table ranging from the best-case to the worst-case. In 2014, the IPCC, United Nation’s Intergovernmental Panel on Climate Change<sup>10</sup>, outlined four pathways which describe different futures. All of which are considered just as likeable to happen depending on, amongst others, how much of the greenhouse gases are emitted and how the human population will grow in the years to come. The ‘best scenario’ in a nutshell is that we manage to push back carbon dioxide emissions after the year 2020, the earth’s populations peaks at 9 billion and sea levels ‘only’ rise with 60 cm. In the worst-case, global climate policy is a big mess, emissions of carbon dioxide have tripled by the year 2100, the earth’s population has grown to 12 billion and sea levels are rising beyond 1 meter and flooding most of the coastline cities.<sup>11</sup> Four years later, in 2018, an international team of scientists added the ‘hothouse’ scenario to this list. This future scenario suggests that human-induced global warming of 2°C could trigger other earth system processes, that can drive further warming - even if we stop emitting greenhouse gases. “A ‘Hothouse Earth’ climate will in the long term stabilise at a global average of 4-5°C higher than pre-industrial temperatures with sea level 10-60 m higher than today.”<sup>12</sup>

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<sup>9</sup> P3 Dystopia, *Överbefolkning - Är vi för många?*, Sveriges Radio, 04 september 2019

<sup>10</sup> IPCC is an intergovernmental body of the United Nations, dedicated to providing the world with an objective, scientific view of climate change, its natural, political and economic impacts and risks, and possible response options.

<sup>11</sup> IPCC, 2014: Climate Change 2014: Synthesis Report. Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change [Core Writing Team, R.K. Pachauri and L.A. Meyer (eds.)]. IPCC, Geneva, Switzerland

<sup>12</sup> Will Steffen, Johan Rockström, Katherine Richardson, Timothy M. Lenton, Carl Folke, Diana Liverman, Colin P. Summerhayes, Anthony D. Barnosky, Sarah E. Cornell, Michel Crucifix, Jonathan F. Donges, Ingo Fetzer, Steven J. Lade, Marten Scheffer, Ricarda Winkelmann, and Hans Joachim Schellnhuber, *Trajectories of the Earth System in the Anthropocene*. Proceedings of the National Academy of Sciences, USA, 06 August 2018

It is 27 September 2019. I join the big climate strike in Stockholm. My sign says: “Doomsday should be fiction, not reality”. I have painted the words in ocean blue, except the word NOT which is in red. Doomsday is generally explained as an anticipated or feared catastrophic event, especially one on a global scale.<sup>13</sup> Why is it that we love watching doomsday movies about the destruction of the earth by a global catastrophe but at the same time barely take any action in real life to avoid these scenarios? Why do we consume doomsday scenarios as pure pleasure whilst we are actually looking into our own doomed future? My brain hurts thinking about this because it is so twisted in so many ways. These stories tell us how we will lose our home and our families and how we might die, or how our children or grandchildren might die, and we pay 150 SEK for it, and we eat popcorn whilst watching it and consider it as ‘a cozy Saturday night out’.

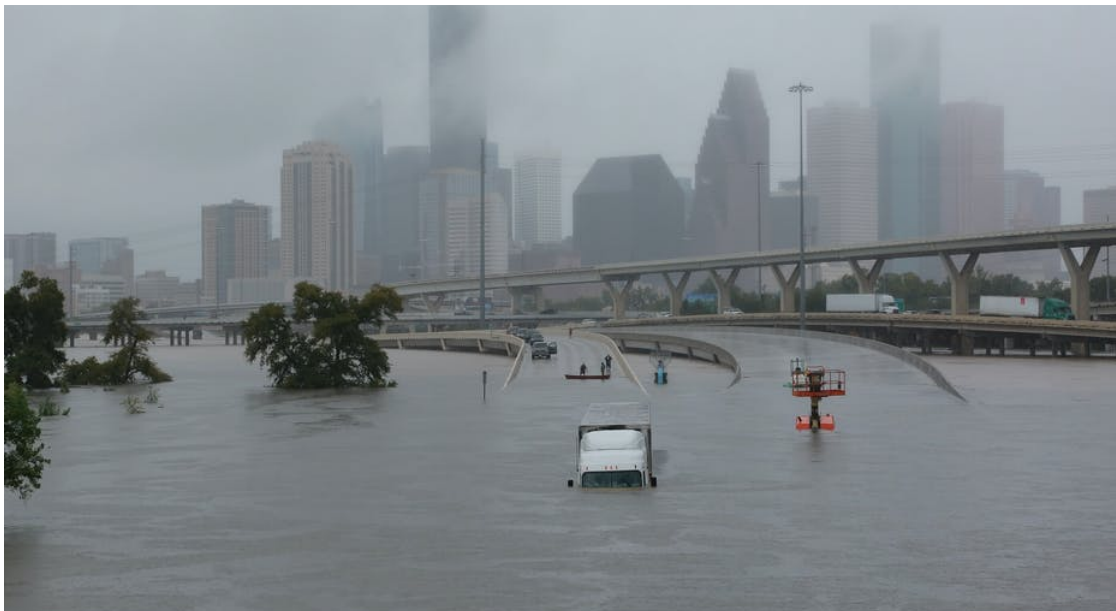
Why is it that we assume we will get away with the best-case scenario in real life, but that it is ‘fun’ to make up stories about the worst-case scenarios? With doomsday scenarios I do not mean zombies or aliens destroying humanity and the earth, I consider that more science-fiction fantasy films. Doomsday scenarios for us living on earth are floods, storms, droughts, famine, diseases, epidemic outbreaks, wars and the total collapse of ecosystems. All possible catastrophes that we humans can cause. Correction: are already causing.<sup>14</sup> Films working with these scenarios are for example *Water World* (1995) telling the story of a future where most of the globe is underwater after the melting of both of the polar ice caps. *WALL-E* (2008) is a story about a little robot assigned to tidy up the planet, which has turned in a garbage strewn wasteland because of rampant consumerism and environmental neglect. Humans fled the planet long ago and live now on giant spaceship circling space waiting to come home. In *Mad Max: Fury Road* (2015), the world has become a desert wasteland and our civilisation has collapsed because of a major energy crisis. *The Day After Tomorrow* (2004) depicts catastrophic climatic effects following the disruption of the North Atlantic Ocean circulation in a series of extreme weather events that usher in global cooling and lead to a new ice age. This all is based on the book *The Coming Global Superstorm* (1999) by Art Bell and Whitley Strieber, which warns that global warming might produce sudden and catastrophic climatic effects. And the list goes on...

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<sup>13</sup> The American Heritage Dictionaries

<sup>14</sup> Kevin Loria, “The world could hit a tipping point that causes warming to spiral out of control — a scenario scientists call ‘Hothouse Earth’”, *Business Insider*, 2018-08-08





Images 1: Mountains of plastic waste in Malaysia (2020) 2: Hurricane Harvey flooding Houston (2017), 11 of 40  
3: still from BBC documentary The Human Planet, Oceans - Into the Blue (2011)





Film grabs 1: Wall-E (2008), 2: I Am Legend (2007), 3: Day After Tomorrow (2004)



“Humans ruined everything. They bred too much and choked the life out of the land, air and sea”<sup>15</sup> writes Cara Buckley in her article *Why is Hollywood So Scared of Climate Change* for the New York Times, in the summer of 2019. In this article, Buckley points out how many super-hero and sci-fi movies have invoked the climate crisis. “They imagine post-apocalyptic futures or dystopias where ecological collapse is inevitable, environmentalists are criminals, and eco-mindedness is the driving force of villains.”<sup>16</sup> Buckley mentions specifically the films up Aquaman, Bladerunner 2049, Snowpiercer, Interstellar, Avengers and Mad Max: Fury Road: all of which were blockbusters with an extreme high turnover. Some examples of ‘eco-minded criminals’ in Buckley’s article are: Thanos in Avengers: Infinity War who opts to head off environmental collapse by reducing humanity by half. The eco-terrorists in Godzilla: King of the Monsters unleashed predatory beasts to forestall mass extinction and keep the human population in check. And King Orm in Aquaman, the leader of an undersea kingdom Atlantis, concludes that the only way to prevent earthly destruction is to wage war on humans.<sup>17</sup>

I must admit that reducing humanity by half would be a hell of an effective solution to a lot of climate problems. Yet Buckley criticises this kind of filmmaking: “these takes are defeatist”, with these kinds of stories, we are already giving up! Professor Michael Svoboda<sup>18</sup>, who is interviewed in Buckley’s article, agrees with this pessimistic approach and claims that almost none of the current films made within the genre of climate change depict a successful transformation of society. Instead, we tend to blow up stories about climate disasters to a ridiculous scale in fiction film. The WHOLE world is under water, the WHOLE world freezes over, the WHOLE world is one big garbage dump and so on. Giving us moviegoers and serie-streamers not much alternative than taking on a ‘sit back and relax’ attitude, because the world will go down anyway. *Instead of giving us a framework that might help us to understand and prepare for what is coming, these successful blockbuster films do not represent a possible future reality with this approach because they basically say there will be no future for us, which puts us in the position of passive bystanders.* Yet, there must be films that do not just ridicule climate change or use it as a mere cool backdrop for a fast and catchy actionfilm? Yes, of course, this is where the documentaries come in. However, with a few exceptions such as the 2006 Al Gore’s hit, *An Inconvenient Truth* (2006), the big audience and buyers mostly ignore or overlook these stories, Buckley points out.<sup>19</sup>

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<sup>15</sup> Cara Buckley, “Why Is Hollywood So Scared of Climate Change?”, *The New York Times*, 2019-08-14

<sup>16</sup> Ibid

<sup>17</sup> Ibid

<sup>18</sup> Professor Michael Svoboda is a writing professor at George Washington University and author at the multimedia site Yale Climate Connections.

<sup>19</sup> Cara Buckley, “Why Is Hollywood So Scared of Climate Change?”, *The New York Times*, 2019-08-14

On the small screen, docu-series and other non fiction shows often address the issue and try to activate us by suggesting how we can change our behaviour in order to counterbalance climate change, but they rarely break through in this age of peak TV.<sup>20</sup> In my opinion, one of the best example of 'Peak TV' would be, at the time of this writing, The HBO series Game of Thrones. This show counted a record-breaking number of 19.3 million viewers for its finale episode in 2019.<sup>21</sup> Imagine that the Game of Thrones series would address climate change. Or set an inspirational example of how to transform and ward off the worst of climate threats. Baked into their dialogues and actions they would give clever suggestions and inspire their fans. Think of how many people they would have reach with these messages! This is also what actor and director Fisher Stevens, who has made several documentaries about environmental issues, says in Buckley's article: "We need a pop culture 'Forrest Gump' movie now to wake people up."<sup>22</sup>

Buckley's article is so inspiring and spot on that I read it over and over. You know when somebody puts exactly the right words together on those cloudy thoughts you have not been able to formalise yourself yet? That was it for me. Though Buckley is not the first one to criticise the stories about the future we tell. Back in 2015, Johan Rockström, an environmental scientist, pointed out in his famous podcast talk: "The future is made consciously cloudy. Young people today are told, with an almost unpleasant persistency, a traumatic story of our future. In movies and books the popular trend is always the same: we begin by destroying our planet. What remains is a fragment of the population, trying to survive on a completely impoverished and ruined earth. Or even more popular, we leave our home, planet earth, to colonise another galaxy."<sup>23</sup> Rockström summed up big movies like *Avatar* (2010), *Divergent* (2014, 2015, 2016), *Hunger Games* (2012, 2013, 2014, 2015) and *Interstellar* (2014). Then he exclaims: "It is time to write a new script! A script where we don't land on another planet, but where we reconnect and land again on earth. ... Where we tip the world in a new transformative journey!"

October 2019. Yes, this is what I want to hear! We need new scripts, new stories on climate change, other stories, more stories! Yes, yes!! But.... wait a minute.... as I write this I realise that much of what Buckley and Rockström point out also applies to me and my initial film idea that I am developing for my graduation project. I too am working on a story about a drowned, destroyed

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<sup>20</sup> Cara Buckley, "Why Is Hollywood So Scared of Climate Change?", *The New York Times*, 2019-08-14

<sup>21</sup> Joe Otterson, "'Game of Thrones' Finale Sets New Series High With Staggering 19.3 Million Viewers", *Variety*, 2019-05-20

<sup>22</sup> Cara Buckley, "Why Is Hollywood So Scared of Climate Change?", *The New York Times*, 2019-08-14

<sup>23</sup> Johan Rockström, *Sommar i P1, English Version*, Sveriges Radio 2015-07-12, 3 pm

world without giving any hope that humans can successfully adapt and live on in a world heavily deformed by climate change.

I too am creating a 'death-end-road' movie in my battle to address climate change. Realising this, I feel quite silly, yet at the same time I realise this underlines how difficult it is to actually tell these other stories. The hopeful ones. Why is that?

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### **Is There Hope?**

"We could hear shouts, cries, the clash of swords on shields - and we knew what awaited us if the city fell. And yet the danger didn't feel real - not to me at any rate, and I doubt if the others were any closer to grasping it. How was it possible for these high walls that had protected us all our lives to fall?"<sup>24</sup> Although many of us understand the danger of a changing climate, it somehow does not feel real, not to me at least. The head knows but the heart does not understand. It cannot imagine what this implies. So maybe it is therefore just easier to imagine there will be no world at all than to imagine how the world will look like when the walls fall. It is easier to erase everything than to redraw all the lines. Maybe that is why our modern storytelling through movies is all about the total destruction of our world. Yet, interviewees in Cara Buckley's article claim that "a growing chorus of voices is urging the entertainment industry to tell more stories that show humans adapting and reforming to ward off the worst climate threats."<sup>25</sup> Although I have not heard nor seen proof of that growing chorus of voices yet, this article is definitely giving me shivers and it has become the right push for me to decide that I will try to create a story about a successful transformation of a society instead of a ruined world. An inspiring example instead of a passive 'whatever you do it does not matter because the world will go down anyway' attitude.

"So why aren't there more realistic, or semi-realistic, or, dare it be suggested, hopeful films about climate change?" Buckley wonders. And I wonder the same. I surely cannot be the first one who aims to create a hopeful cli-fi story. With hopeful I mean: staging situations, in line with scientific forecasts, where the planet is damaged, but at the same time sowing hope by showing how actors (read: our future self) have found plausible ways (read: no magic or unconvincing tech solutions) to mitigate, stop, counterbalance, repair the damage or transform their ways of living to adapt to the new situation. Rather than seeing a full catastrophic, deterioration of the planet, this are the kind of stories I am advocating for!

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<sup>24</sup> Pat Barker, *The Silence of the Girls*, United Kingdom 2018, p. 4

<sup>25</sup> Cara Buckley, "Why Is Hollywood So Scared of Climate Change?", *The New York Times*, 2019-08-14

And no, of course I am not the first one trying to create a hopeful story. In a search for an answer, Buckley explains what several directors with the same goal have been telling her: “It is hard to find financing for movies that risk being real downers and challenge audiences to change their ways.” According to them, “people seek out entertainment to escape” not to be lectured on how to change their behaviour to contribute to a better world.<sup>26</sup>

Yes, fine, climate change is a real downer. Even I, who always have had a huge natural interest in climate change and who is currently working on two projects about a flooded future world... even I have built up a resistance to read or talk about it. To be perfectly honest, I do not want to do it anymore. I would rather be ignorant and foolish. Yet I have to and I feel I have no other choice than dedicating my creative practice to raising awareness about climate change. And I want to do that with one of the most powerful storytelling tools there is at the moment: moving imagery. Because “storytelling is the most powerful way to put ideas into the world”<sup>27</sup> and if I am able to shape a conceptual, hopeful cli-fi world that functions as a ‘plug and play’ stage for those who create character-driven stories, like screenplay writers, directors and game designers, then their stories taking place in my world could be presented to the public through some of the most powerful entertainment markets of this moment (TV, Film and Gaming), that should get the message across right? I have to give it a try!

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### **What is Cli-Fi?**

The abbreviation Cli-Fi is used to describe novels and movies that deal with man made climate change often taking place in the world as we know it or in the near future.<sup>28</sup> The term is, with a playful nod, modelled after the assonance of sci-fi, science fiction. Science fiction is one of the big players in the speculative fiction category. “Speculative Fiction is a catch-all term for genres like fantasy, science fiction, paranormal, and occasionally horror. Essentially, anything that can’t (or, well, usually doesn’t) happen in the world we live in belongs in the speculative fiction category.”<sup>29</sup> I am of opinion that cli-fi also belongs to the category of speculative fiction, yet, on the contrary of what is stated above, it is speculating about anything that CAN and MIGHT happen in the world we live in. It is taking facts and figures from scientific research as a starting point, then speculates and imagines how those given facts will change all corners of our world.

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<sup>26</sup> Cara Buckley, “Why Is Hollywood So Scared of Climate Change?”, *The New York Times*, 2019-08-14

<sup>27</sup> Robert McKee. source missing

<sup>28</sup> Diego Arguedas Ortiz, “How science fiction helps readers understand climate change”, *BBC Culture*, 15 January 2019

<sup>29</sup> Rebekah Loper, *The A-Zs of Worldbuilding, Building a Fictional World From Scratch*, Tulsa 2017, p. 1

An example of how a natural catastrophe has a rippling effect through society can be found in the research when hurricane Katrina hit New Orleans in 2005: after the event the crime rate in the area went up significantly. “In two days, eighty percent of New Orleans was flooded, with some parts under 15 feet of water. Even though the population loss was minimal because of early warning, Katrina forced more than a million residents to evacuate, causing the largest and most abrupt mass movement of U.S. citizens since the Dust Bowl [in 1930].” The research results suggest that “immigration of Katrina evacuees led to a more than 13 percent increase in murder and non-negligent manslaughter, an almost 3 percent increase in robbery, and a 4.1 percent increase in motor vehicle theft.” Yet the researchers were “unable to determine whether the crimes were committed by evacuees, or were triggered by their presence”.<sup>30</sup>

Mass movements caused by flooded cities create a hostile and cramped environment. Sure, this is common knowledge but empirical research on one of the biggest hurricane disasters offers a concerning and real-life doomsday example. If, by the year 2100, so many coastal cities might have flood that 200 million people will lose their homes<sup>31</sup>, the mass movements and following increased crime rates will be enormous on a global scale. What would that look like? The picture is too big to grasp and it is so big, I cannot take enough steps back to see and understand it. Damn it....! Here I go again, cooking up quite dark future scenarios. *Of course climate change will affect us negatively, yet what we need now is to hear cli-fi stories that focus on the positive side of what the future and a changed climate might bring us. Stories that show actions and interventions that could counter balance the negative effects climate change will have on us and our living environment. Stories that say: ‘yes coastal cities will flood in the future and it might become more dangerous but instead of robbing and stealing we could create ocean farms on the ground floor of our flooded buildings that provide us food’. Maybe that sounds silly, but at least it is not all doom and gloom right?*

It is now November 2019. Things are starting to fall into place. The findings of my writing shape the ideas and design of my short cli-fi movie that I am going to film in the spring of 2020. The story will take place in a world that is not wiped out by just one major climate disaster (as most of the cli-fi storytelling is at the moment), yet in a world heavily affected by the many natural disasters, drowned cities, migration flows and changed social systems. *With this as a backdrop, I will try to speculate how the rules and systems of our future society should change, adapt and transform to be able to make it a better place again: it will be a speculative fictional world that gives us hope. Speculative World Building. Speculative Fiction. Speculative Production Design.*

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<sup>30</sup> Andrew Hussey, Alex Nikolsko-Rzhevskyy, Ioana Sofia Pacurar, *Crime Spillovers and Hurricane Katrina*, University of Memphis, 2011

<sup>31</sup> Jessie Yeung, “Rising sea levels threaten hundreds of millions -- and it's much worse than we thought”, *CNN*, 30 October 2019





Images 1: Hurricane Katrina flooding New Orleans (2005), 2: Beyoncé's *Formation* music video commenting on this catastrophic event (2016)

## Let's Speculate

So, let us speculate about our future world and how to survive in it. Theoretical physicist Robbert Dijkgraaf is very clear about it: what we have to do – and this is a huge assignment – is to review all aspects of life: agriculture, electricity, the way we produce our products of plastic and concrete, the way we transport ourselves. We all have to re-invent these aspects, which will be a formidable challenge!<sup>32</sup>

Dijkgraaf claims to be positive, though only mildly positive, about this. Yet he believes that humanity collectively has the brain capacity and the technical know-how to figure out these re-inventions. Dijkgraaf's words on collective achievement take me back to the talk of Johan Rockström on the Swedish Radio<sup>33</sup>. He pointed out all the challenges we have ahead of us in stopping and reverting climate change, and underlines that we together need to become planet keepers. If I am being honest, to me this sounds like an impossible task for us, the lazy, self-indulgent, only-prioritising-our-own-needs individuals that we are. Can we really put our heads together and change as one? It sounds naïve as we probably will just do what is needed to save our own ass first, right? But then, Rockström recites his conversation with global leadership thinker Simon Sinek. This is what Sinek told him:

“The law of how big changes take place shows that it is possible to tip the world in a new sustainable direction. When we abandoned slavery, smoking in airplanes, introduced democracy ... Do you think it happened after consensus? Do you think everybody agreed? Do you think that truth beat denial and paid opinions? No way! On the contrary: there was always a committed minority, an alliance of willing people showing the way, who tip the perspective, introduce new priorities and values. And in case after case it turns out that when between 15 to 18 percent of a population believe in a vision, an idea is convinced and changed their perspective, the society or community tips over. And with it, the market, and potentially, the whole world. You should know that in any population there are about two percent fanatics. You know, those are the ultra-committed - (those who sleep 48 hours on the street waiting for the next iPhone). These [2 percent] are the hyper-environmentalists, they will always agree with you. Then there are ten percent who are well-informed, committed, who are early adopters. They are the convinced choir. [...] That makes 12 percent! So we are missing six percent to create a global sustainability revolution. [...] Where will they come from? Well not from the other extreme end of the population pyramid. There will always be ten percent deniers and sceptics. [...] Ten percent who believe that the moon landing is American propaganda, that evolution is a lie, that climate research is a propagandistic conspiracy. Forget them. They are irrelevant. In between these two

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<sup>32</sup> DWDD University, The Annual Review with Robbert Dijkgraaf, BNNVARA, 23 December 2019

<sup>33</sup> Johan Rockström, *Sommar i P1, English Version*, Sveriges Radio 2015-07-12, 3 pm

extremes, we find the big masses: over 70 percent of the population. And they are divided into two categories: one of them is completely indifferent, they have no strong opinion about the environment or climate. They will always buy the cheapest tomatoes in the groceries store, no matter what you say. But, on the other hand, they don't complain if environmental taxes make sustainable food cheaper then you will find organic tomatoes on the plate. The other half, they are the really interesting ones: they are your passive allies. They trust science. They are worried, but they are not active. They follow but do not make their voice heard. There is where you will find you six percent. You reach them, and you will have a global revolution at play, because when they join in, the rest of the passive friends will too. And with them the indifferent. And ultimately even the deniers have to crawl on board. ... Yet you can't reach them with a plan on what to be done, but WHY it is to be done. They want to hear your dream, your vision. They want to know why a sustainable world is a better world."

These statistics give me so much hope: we can actually do it, we can change direction! Yet this is a feeling of hope that is killed, a week later, on December 30th 2019. I have the radio on in the background and I hear in a flash some trend forecaster predict the year 2020 with three strong words: **Hot, Hell** and **Chaos**. Only a few days later news reaches Europe that Australia has started to burn as never before. With record breaking temperatures of between 40 - 45 degrees celsius throughout the entire continent.<sup>34</sup>

*Gosh... we are burning already*, I find myself thinking. Is there even enough time left to create a speculative cli-fi story about a small island in the Pacific Ocean where a new, fictional civilisation sets the example of a sustainable, better way of living? Because that is, in a nutshell, what my graduation project is about.

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## A Critical Email

January 2020. I return after the Christmas break and am on fire. I am ready to produce my graduation project: all drawings and mood boards are done, the material is ordered, check check, check. I got the green light from our producer at school to start the build: check. I can manage it with the budget: check. All the crew (and all from my wishlist) expressed to be excited to work with me on this project. Everything looks good. My production designer heart is happy, and finally I can start building my filmsets. And that is exactly what I start doing, with a big blast of energy! "Go big or go home", I hear myself saying many times with a big smile on my face.

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<sup>34</sup> "Australia fires: A visual guide to the bushfire crisis", *BBC news*, 2020-01-10



To be honest, I have forgotten a bit about my research whilst being so busy with practical matters. and beings hands on building up everything in the filmstudio. Until I get a bit of unexpected reply from one of the material suppliers, with whom I am in touch with to receive large amounts of ocean plastic (yes, I am trying to build my filmset with real trash from the sea). First I feel a bit offended by the patronising tone of the email. Yet, at the same time, I like how it puts me in a position to reflect upon what I am doing.

*It translates: you need to understand an important thing about the Great Pacific Garbage Patch. The first image that comes up is that it is like an island of plastic. Yet this is a great miscommunication between the scientists and the media. The correct picture is that the Garbage Patch is a plastic soup, where a concentration of plastic in the sea swirls is high, yet you cannot see the plastic with the naked eye. I hereby include up-to-date information on the accurate research and hope you take it into account so that you do not support the incorrect picture any further. There are however such plastic mountains as in your mood board to be found on several places on land - there are huge dumps like this in the USA and India, for example. Would you be able to change the story a bit to not make it misleading?*

I do know about this miscommunication between research and media. Yet I have always seen it as a highly interesting point. The existence of garbage patches has been known among scientists since the late 1980s, yet there was no big reaction in the rest of the world. We did not act upon these given facts. It only hit the media by a storm when Captain Charles Moore described the patch as being “an island twice the size of Texas” in 1997<sup>35 36</sup>. The word ‘island’ finally captured the imagination but only after nearly 10 years. I reckon this is absolutely understandable; it is hard to imagine what a billion tons of floating almost invisible plastic must look like. But this can all hit you when you imagine the following: you are driving through Sweden, from North to South, three times. And instead of the countryside you only see mountains of floating plastic for the entire journey.

Now that I can imagine! Now images of floating plastic mountains floating in the ocean pop up on my screen when I google ‘ocean plastic’ or ‘the Garbage Patch’. It seems that dry scientific facts don’t stick to our brains very easily: they are too abstract, not understandable in the layman’s term, boring and easy to walk away from. They feed documentaries but don’t spark our imagination until it is compared to something we actually can relate to – and in this case, an island. Is it that bad to take these dry facts and give them a speculative spin in order to make a deeper impact?

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<sup>35</sup> Lindsey Hoshaw, “Afloat in the Ocean, Expanding Islands of Trash”, *New York Times*, 09-11-2009

<sup>36</sup> Alex Lubben, “The Great Pacific Garbage Patch has grown to twice the size of Texas”, *Vice*, 06-04-2018



Images 1: Combined image (left) film grab from *Isles of Dogs* (2018) + Malaysian Plastic Waste 'mountains'. Image 2: plastic marine debris

How much freedom do we storytellers have? If we mess too much with scientific facts, we make them ridicule. Yet if we don't do anything with them, they seem to have a hard time reaching to the big crowd. **How can storytellers like me create a believable fictional story world and story that tells its audience that what they see is based on scientific facts and predictions and that these are taken into the fictional sphere in order to capture their attention and give them a frame of understanding about their future?**

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### **After Hot Comes Hell and Chaos**

It is March 2020. I have forgotten all about the big fires in Australia, and so has the rest of the world. So it seems at least, because now my social media newsfeed, lunch conversations with fellow students and own thoughts are occupied with a bigger fear taking over the world. A crisis that finally came all this way to us in Europe, and right to our front doors and into our homes. It is the beginning of March 2020 when the World Health Organisation officially declares the rapidly spreading coronavirus outbreak as a pandemic and acknowledging what has seemed clear for some weeks already: the virus will spread to all countries on the globe.<sup>37</sup>

It is surreal to observe what happens to Europe, a continent where many citizens do not remember war times or starvation. Born in 1989, I do not at least and neither do my parents. And it is even more surreal finding myself in the middle of it all and realising how privileged and safe I have lived my life so far. Some call it 'historical times' with a bit of excitement in their voices. Others ask me how it feels for me to work on my graduation project in these times, as the future world I am creating 'is so suiting to what is happening now'. Well, sure, I haven't exactly been talking about a virus outbreak that is unhinging and disorganising the world as we know it so drastically. But I guess, if I would exchange the words 'pandemic' with 'natural catastrophes' in today's situation, it would get pretty close to the image I am trying to put forward. How the rules and laws of society are abandoned or rewritten, and how the things we regard as normal – working nine to five, being able to call a doctor at any time of the day, going to the cinema, meeting friends in cafes or sending our kids to school – are suddenly very challenging or not possible anymore. And how that, in turn, affects our food supplies, our consumption behaviour, our safety, our mental and physical health, our society's development, our hopes and dreams. And still we are the privileged part of the world in this matter. Most of us have money in our bank accounts, a safety network, good functioning hospitals nearby, and a government that tries to take care of us.

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<sup>37</sup> Director General Dr Tedros Adhanom Ghebreyesus at the opening speech of the World Health Organisation (WHO) at media briefing on COVID 19, 11 March 2020

On 19 March, the doors of my school close forcing me to leave the filmstudio where I am at high speed building my filmset for the trailer of the world of the Pacific Patch People. They say it is for two weeks, but nobody knows for sure. It might be until the end of the summer. So now I am sitting at home, staring at my computer screen. I was supposed to be covered in paint and glue right now, shaping the set of my story. Yet now I am staring at my master thesis instead. Which is fine I guess. I feel a bit thrown by the sudden full stop and change of plans, yet it also feels nice to write again as I work on my thesis and pondering on all the effects the outbreak has on us. I am staring at the pages of my next chapter, which is about world-building. World-building is generally explained as the process of constructing an imaginary world, sometimes associated with an entire fictional universe. The resulting world may be called a constructed world and has a developed imaginary setting with coherent qualities such as a history, geography, and ecology<sup>38</sup>. I realise that the virus suddenly created a new world for us complete with a new set of rules and regulations. The virus outbreak resulted in what many storytellers of speculative fiction try to accomplish: it builds a new world. World. Building.

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<sup>38</sup> John Hamilton, *You Write It: Science Fiction*, ABDO 2009, pp. 8–9



## — CHALLENGE 2: CREATE it with the world-building method as a starting point (2. World-Building)

*My graduation project takes further shape by using a world-building method in constructing an imaginary world with its own coherent set of rules. First, a general overview of the Pacific Patch is described and designed, determining broad characteristics such as the world's scale, inhabitants, costumes, technology level, major geographic features, weather, history, language, architecture and culture. From there, the rest of the Pacific Patch is created in detail. This results in a complete world-building bible: a document, almost as thick as a bible, that visualises the entire world of the Pacific Patch People.*

The world-building method is a common technique used by science fiction and fantasy writers. Famous examples of imaginary worlds are Tolkien's Lord of the Rings, J.K. Rowling's Harry Potter series and the role-playing game Dungeons & Dragons by Gygax and Arneson. It is easy to get lost in the process since "world building is so much more than creating a planet in a galaxy far, far away. It's more than setting. It's more than mood, tone, and exotic elements. It's more than language. It's taking the foreign, the alien, the unfamiliar, and making it resonate with the readers. Readers should not feel like an outsider or a spectator of the world. They need to identify with the characters, whether those characters are humanoid, demon, angel, vampire, were, or an alien form of life. Simply stated, the writer must make the unbelievable believable. In the world of speculative fiction, it's not only important to have a great story, it's imperative to have a great story world."<sup>39</sup>

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### **A Great Story World**

That is my starting point: I am trying to create a great story world without the actual story written yet. An empty vessel, yet filled with fertile soil to grow stories from. During a seminar, which is part of the Independent Degree Project course at the film institute, one of the professors questions my approach. "It seems to me that you do not take the full responsibility for your entire research project" she tells me in front of everybody. This is her reaction to one of my goals to hand over my designed 'world' to those storytellers who can add characters, storylines, conflicts and dilemmas to it. Frankly, I must say I do not agree with the professor's opinion and reaction. I take full responsibility for my part, creating the story world, which I feel responsible for as a production designer. Others are much better in creating characters and storylines. In addition to that, I don't regard myself as an artist who works alone on a project from idea to final presentation.

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<sup>39</sup> T.G. Franklin, World building Guide & Workbook, Papersteel Press, 2016, p.2

I am a filmmaker who is part of a crew that works with a chain of deliverables – that goes from one department to the next – and together, this chain creates the final product: the film. So why does this professor and I think so differently? My best guess is that it has to do with the fact that the professor works as an independent artist, yet even more with how most stories for film are created nowadays.

On a rainy afternoon, just before the beginning of the Christmas break, I join my classmates at my favourite bar across the school. Sitting there on one of the red velvet sofas, a cinematographer asks me about my graduation project and I tell him about the cli-fi film that I am creating. “Ah!” he replies enthusiastically, “So you want to be a director then?” “No...”, I reply I bit confused, “I am production designer...” “Yes, but you are developing a film, right?” as he smiles. Afterwards I understand why he must have misunderstood me. He assumed I had ambitions to become a director probably due to the fact that I was telling him about the film idea that I am creating (and gathering a crew around me to realise it). But I do not. I want to create the world for a possible story which I then hand over to the director to fill it in with detailed story lines that can take place within the boundaries of that world. I reckon there are not many film proposals submitted for funding that ‘only’ describe the elements of a world and the designed set of rules in which a story could take place. What kind of planet we are on, what kind of weather it is, what kind of food is cultivated, the kind of power-structure there is, and the collective dreams and fears the inhabitants share. During the course of developing my project, I experience multiple times that world-building is an unusual starting point to create a small film.

With my world-building bible (which describes many elements of the world of the Pacific Patch People), I create a visual story board of environments that I want to build and film as part of my graduation project. A short trailer to visualise the world I have been working on. With the bible, my drawings and visual storyboard document, I invite a screenplay writer to create a short five-minute script for my graduation movie. Luckily the writer likes this “backwards” approach as he called it, and in a few weeks there is a written script on my desk. Suddenly characters come to life and move through the world that I have been working on for so long. It’s just for five minutes but it works: suddenly I can see the writer’s characters inhabiting my story world.

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## A Never-Ending Story World

February 2020. Only three months left until my exam. The world of the Pacific Patch People is far from done and the work on it seems never ending... Many who work with world-building warn that it is a huge task and easy to get lost in. "To build a story world, the author must be part artist, part engineer and sometimes part mad scientists. It is hard work, and like any other building project, it requires blueprints or instructions and the proper tools."<sup>40</sup> Yet, it cannot be half done either, like only applied "around the edges of the story, creeping in only when needed to explain a story element."<sup>41</sup> This is why world-building often makes use of creating detailed fantasy maps to show the full scale of the world. "Story and story world should be an intricately woven tapestry, each thread depends on the other to present the whole pattern. Any bare spot, any frayed edge, any torn or faded thread will ruin the aesthetic value of the art "<sup>42</sup> of world-building. The world-building work also needs to be consistent: "From a game-design perspective, the goal of world-building is to create the context for a story. Consistency is an important element, since the world provides a foundation for the action of a story."<sup>43</sup>

Well maybe this is why the majority of films do not start with world-building as the more I write about the world (whilst also drawing a map of everything) during my Production course, the more I realise I need to incorporate more elements to fill the bare spots that arise. It is like the world keeps on extending in front of my eyes and I cannot keep up with its pace. I love it, but at the same time it stresses me because I need to work on other things as well. I do not have time to get lost in the world that I am constructing. And also, I have to be honest here, I realise pretty quickly that I cannot figure everything out myself. Sure, I can be part artist, part engineer and part scientist, but I am none of these things fully and I feel I want to discuss my ideas and theories with real artists, real engineers and real scientists to make the world more solid, coherent, consistent and believable. Where do I find time to do that? This feels like an assignment that could take several years.

I seem to be wandering off and getting lost in writing about world-building as a method. So let me return to my question whether world-building can help us understand our future, if it can motivate us to fight back big climate shifts and if it can reach out to those passive six percent of the population that need to join the early adapters. Can it contribute to prepare us to transform into a society better adapted to a world that will become affected by upcoming climate changes?

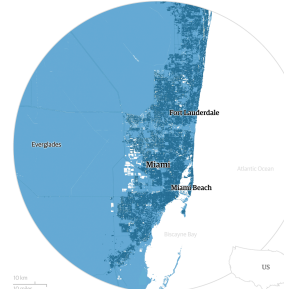
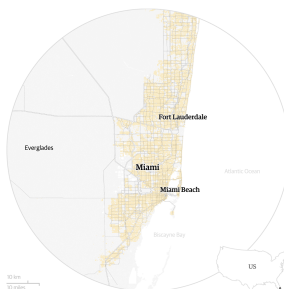
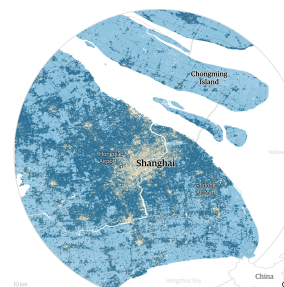
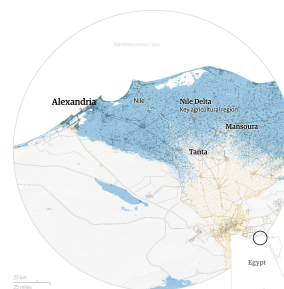
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<sup>40</sup> Ibid, p.2

<sup>41</sup> Ibid

<sup>42</sup> Ibid

<sup>43</sup> Francois Dominic Laramée, Game Design Perspectives, Massachusetts 2002, p. unknown



Images 1: Fantasy map as shown in the Lord of the Rings book (1954).

Image 2: Speculative future 'Flood maps' found in publication "The three-degree world: the cities that will be drowned by global warming" *The Guardian*, 2017-11-03, created by using sea-level rise estimates from Climate Central and digital elevation data



## Public Imagination

In the book *Poetic Justice, the Literary Imagination and Public Life* by philosopher Martha C. Nussbaum, I read about Mr. Gradgrind, the notorious school board superintendent in Dickens's novel *Hard Times* whose name is now used generically to refer to someone who is hard and only concerned with cold facts and numbers. Mr. Gradgrind sees literature as subversive: "It is the enemy of political economy as Mr. Gradgrind knows it: an all-encompassing scientific project committed to representing the complexities of human life in 'tabular form'" Nussbaum writes. She continues: "Literature expresses, in its structures and its ways of speaking, a sense of life that is incompatible with the vision of the world embed in the texts of political economy; and engagement with it forms the imagination and the desire in a manner that subverts that science's norm of rationality." This is why Mr. Gradgrind regards storybooks as "wrong books" and, being a man of cold facts and numbers, Nussbaum understand his deep worries: "When idle storybooks get into the house, political economy is at risk. The world is seen in a new way, and uneconomical activities of fancying and feeling are both represented and, worse still, enacted".<sup>44</sup>

Nussbaum's words remind me a bit of the material supplier lecturing me on not to enhance 'the incorrect media hype' of the Pacific Garbage Patch being a real island. Where I want to evoke and enlarge feelings and reactions from the audience, the supplier warns me not to mess around with the 'cold facts and numbers in tabular form'.

Earlier in this writing, I asked myself the question how much creative freedom we cli-fi storytellers may allow ourselves when borrowing facts about climate change from science, and to use as starting point and turning these findings, through speculation, into an imaginative story. Nussbaum's comparison between novels on one hand and histories and biographies on the other hand helps me in my search for the right thing to do. She writes: "My central subject is the ability to imagine what it is like to live the life of another person who might, given the changes in circumstance, be oneself or one of one's loved ones. So my answer to the history question comes straight out of Aristotle. Literary art, he said, is "more philosophical" than history, because history simply shows us "what happened", whereas works of literary art show us "things such as might happen" in human life. In other words, history simply records what in fact occurred. [...] Literature focuses on the possible, inviting its readers to wonder about themselves."<sup>45</sup> This is what I regard as the power of film: to help the public to imagine what it is like to live the life of another person. And in the case of my project, it is to live the life of our offspring, our great grandchildren, those born in the future after we are gone. Scientific findings might present us with the cold and hard facts about

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<sup>44</sup> Martha C. Nussbaum, *Poetic Justice, The Literary Imagination and Public Life*, Massachusetts 1995, p. 1-2

<sup>45</sup> Ibid, p.5

the future, yet film can invite the public to wonder about themselves (or one's loved ones) and their position in society when these facts (let us say, the Pacific Garbage Patch will keep on growing if we don't change our consumption and throw-away behaviour) will actually take place.

According to Nussbaum, literature and the literary imagination can make a distinctive contribution to our public life. "It tells its readers to notice this and not this, to be active in these and not those ways. It leads them into certain postures of the mind and heart and not others." Nussbaum regards literature as powerful but admits that the problem is that it is seen as subversive, as optional, as "something that exists off to one side of political and economic and legal thought, in another university department ancillary rather than competitive."<sup>46</sup>

So, why am I talking about Nussbaum and literature in my 'world-building for film' chapter? Well first of all, I regard that many of us judge fictional stories told through moving imagery in the same way as Nussbaum describes the subversive position of literature. It is often seen as optional and not able to overrule the political, economic and legal thought that rules our society. Whereas many consider literature and film as illuminating for the personal life and the private imagination, they also "believe that it is idle and unhelpful when the larger concerns of classes and nations are at issue."<sup>47</sup> Despite this subversive position, Nussbaum advocates for the great contribution literature and film<sup>48</sup> can make to our public life. She introduces the term 'public imagination' to me (the second reason why I am referring to her book). Public imagination is "an imagination that will steer judges in their judging, legislators in their legislating, policy makers in measuring the quality of life of people near and far."<sup>49</sup> This sounds like the desired shared imagination of the 18 percent of the population that has the power to convince and change the perspective of a society or community of which Simon Sensik spoke to Johan Rockström about.

Nussbaum mentions she starts to notice the lives of factory workers in her own society and how their lives in some ways differ from the workers in Dickens' book (however they do not differ as much as she wishes). Nussbaum states that she assesses this with "reference to certain very general norms of human flourishing that are built into my compassionate response, into its judgment of

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<sup>46</sup> Ibid, p.2

<sup>47</sup> Ibid, p.3

<sup>48</sup> Nussbaum is convinced that some films have the potential to make contributions similar to those she argues that novels are making. She is also admitting a bit reluctantly, although she herself claims not to be reluctant, that film in our culture has to some extent supplanted the novel as the central morally serious yet popularly engaging narrative medium. So from now on I will write 'literature and film' in this essay whenever Nussbaum mentions literature or novels.  
p.4

<sup>49</sup> Ibid, p.3

what is serious damage to a life and what is not.”<sup>50</sup> This reminds me of a brilliant novel that I read called *On Earth We're Briefly Gorgeous* by Ocean Vuong. Vuong tells his readers, his audience, about the dire circumstances of workers of the nail salon in which his mother works. The toxic chemicals, the low wages, the insecurity, the little to zero possibilities to break free from it, how the dreams the immigrants had coming to the US all slowly died there in that nail salon. Ever since that novel, I see them differently when I pass a nail salon in the city - I see their struggle against the toxic chemicals instead of a face mask which I always thought was more like a habit in their culture. My compassionate response has changed because of this novel.

So how can films in the cli-fi genre create a public imagination that triggers a compassionate response in almost 20 percent of the world's population and steer the judges, legislators and policy makers? And how can the 20 percent then ignite a total society transformation? A transformation that both slows down climate change and/or prepares us for the changes that are inevitably coming for us. I do not sit on all the right answers and solutions here, yet I believe we need to start with a believable context, a context that sparks our imagination instead of killing it by showing the end of the world, that helps us looking into the future. And this context could be designed by some serious world-building.

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### **World-Building to the Rescue**

So, let's say a production designer (in close collaboration with scientists, engineers and artists) manages to present one or several solid, coherent, consistent and believable scenarios of how our earth might look like in 50 to 100 years (the story world). Then that story world provides the foundation for the actions of the story's characters. Characters we the audience can identify ourselves with (or our future loved ones). This means the characters are humans, our future selves, and not humanoids, mutants, aliens, wizards, animals or other fantasy characters. That story itself can then be a hopeful story that reacts to the story world showing how our future loved ones have adapted and transformed to this changed living environment. *Then that would give us, living in the now, examples of how we could prepare and plan for such possible future scenarios. Scenarios that are not made cloudy and dystopian, but that provide us with a clear image of the changes that are coming and help us understanding of what is ahead.*

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<sup>50</sup> Ibid, p.7

Such a story would be “disturbing in a way that history and social science writing frequently are not” Nussbaum writes. Why? “Because it summons powerful emotions, it disconcerts and puzzles. It inspires distrust of conventional pieties and exacts a frequently painful confrontation with one’s own thoughts and intentions. One may be told many things about people in one’s own society and yet keep that knowledge at a distance. [Stories] that promote identification and emotional reaction cut through those self-protective stratagems, requiring us to see and to respond to many things that may be difficult to confront — and they make this process palatable by giving us pleasure in the very act of confrontation.”<sup>51</sup>

I like what Nussbaum writes about promoting identification and emotional reactions that cut through our self-protective stratagems. And to make ‘confrontation with difficult things’ pleasurable. For me that is what an imaginary story created with world-building could achieve. Look at the huge fan base of for example *Harry Potter* or *Game of Thrones*. I myself know exactly in what house I would be at *Hogwarts (the House of Ravenclaw)*, which spirit animal appears when I cast the Patronus charm<sup>52</sup> or to which clan I would belong to in the *Game of Thrones* world (I would be like Ygritte - a redheaded woman of *the Free Folk* who lives north of the Wall). My emotional reaction and connection to the characters is strong and maybe based on the simple facts that I have also red curly hair or that I also love studying like the *Ravenclaw* characters. I feel connected with them. Yet being aware of the fact that I never, nor anybody else around me, will ever be a wizard or see flying dragons blocks me from identifying myself with them fully. Also the battles they fight in their worlds (against *Voldemort’s* army of dark wizards or the zombie *White Walkers*) will never be one of my or my offspring’s battle.

However, if we would take away the magic and fantasy yet keep the details and the scale of the imaginary world, I could easily imagine myself wandering around in that world. Day dream about how I would behave in that world. And if the battles were more believable — preparing for storm that puts myself and my family in danger, trying to seek refuge in another country that has better living conditions, learning how to take care of myself when supermarkets are closed...

Whilst writing this I realise these kind of scenarios are featured almost daily in the news already, I know it, but... they don’t cut through my ‘self-protective stratagems’ because it feels so far away. I can keep this knowledge at a distance and I feel safe and protected here in the Swedish society. It doesn’t require me to see or to respond to many things that may be difficult to confront: that I most likely would have a very difficult time protecting myself if society’s safety net would disappear and that I would have an extreme hard time to survive on my own if the supermarkets would not have food on the shelves anymore.

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<sup>51</sup> Ibid p.5-6

<sup>52</sup> A spell which produces a silver, animal spirit guardian, used to protect a witch or wizard

So maybe all we need is that we can identify ourselves with the characters and through this we can imagine to live in the future world. In the series *Masters of Science Fiction* the actress Whoopi Goldberg shares a beautiful experience with us: "I can tell you what happened to me the first time I saw Star Trek. Really before Star Trek there were no people of color in the future. We didn't really exist at all anywhere and Gene Roddenberry created this group were this beautiful black women (Nichelle Nichols), not a mammy, was head of communication. So to see her in this position for me was like: extraordinary! It is why I went to Gene to do Star Trek: The Next Generation. It was because of what Nichelle Nichols showed me, which was that I had a future in the world."<sup>53</sup>

With this said... Then there needs to be a future world for us. Because even if I would identify myself with a character of a cli-fi story. If her world gets crushed by one gigantic wave or if I need to get on a spaceship to survive — then there is no world for me to imagine myself walk around in. Then there is no future.

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<sup>53</sup> James Cameron, *Story of Science Fiction, episode 2 Space*, SVT Play, 08-July-2020, Sweden

## — CHALLENGE 3: PRODUCE it as climate-neutral as possible

### (3. Short Film)

*The final step of my graduation project is to make a short film to translate the research and the world-building findings into moving imagery. That show a three dimensional fragment of the world that I have built on paper and my computer screen. The goal is that this world becomes an open source 'canvas' for a feature film, tv series or game. So the aim is to pitch the world bible + trailer to international streaming websites and production houses. It will be presented as a visual "plug & play" world with a fixed set of rules for writers, film directors, producers, theatre makers, game developers and more, to tap in their own storylines and characters.*

I love film. I absolutely adore film and what it does to me, to my friends, to entire communities. I can talk hours and hours about film. Can't get enough of it. Yet I hate film: it is a dirty and filthy industry. It feels like I have fallen in love with the wrong person.

"Behind Every Film Production Is a Mess of Environmental Wreckage" headlines a Vice article on 15 October 2019.<sup>54</sup> It starts off with summarising how a big blockbuster movie is nowadays developed, taking Jurassic World: Fallen Kingdom as an example:

Pre-production started in 2015 and included the film's writer taking a cross-country road trip to hash out story details and a four-week working trip in Barcelona, where director J.A. Bayona and production designer Andy Nicholson figured out visuals like set design and framing shots. In 2016, scouting for shooting locations began internationally—scouts trekked to Peru and Ecuador—and eventually, massive sets were built on a soundstage in England and Hawaii. Creating the film required flying hundreds of staffers in departments like art, costuming, creature effects, special effects, visual effects, and editing to various places around the world. And all of that emitted a huge quantity of carbon, and resulted in a lot of waste.

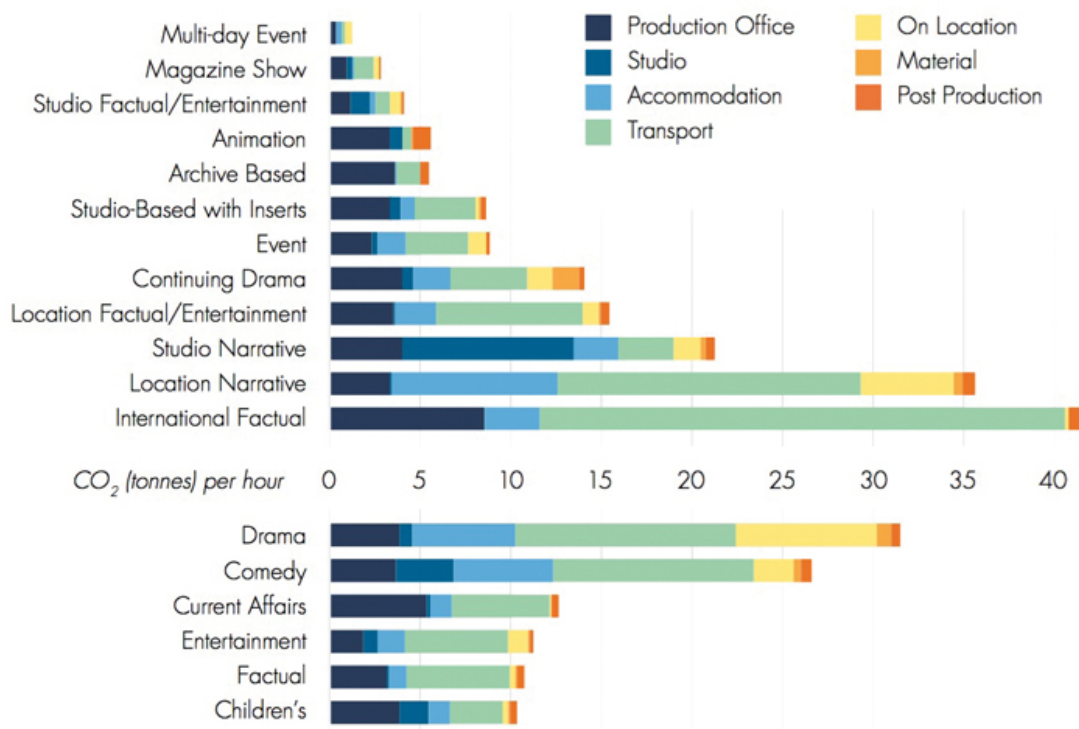
The film and television industry might not be the first thing that pops up in peoples mind when you ask them about 'the bad guys' polluting our world. The oil, air travel, meat and clothing industries usually are top listed when talking about carbon-intensive industries. However, when thinking about it, a movie production leans heavily on using the products of all those industries. "Whenever I visit a movie set, it always amazes me how much environmental damage is wrought in the name of entertainment. From the generators to the caterers delivering food onto set, making a film eats up energy like no other art form."<sup>55</sup> says Kaleem Aftab, who claims that the

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<sup>54</sup> Kyle Raymond Fitzpatrick, "Behind Every Film Production Is a Mess of Environmental Wreckage", *Vice*, 2019-10-15

<sup>55</sup> Kaleem Aftab, "Emission impossible: Why Hollywood is one of the worst polluters" *Independent*, 2007-11-16

entertainment industry is one of the worst polluters of today. This is also what Fitzpatrick concludes in his article for Vice: “Though we tend not to think of the entertainment industry as an *industry*, with all the outputs that that entails, it does a significant amount of environmental damage”<sup>56</sup>. In his article Fitzpatrick refers to a report by Albert (the BAFTA’s industry-backed sustainability project) which claims that “a single hour of television produced in the UK — fiction or nonfiction — produces 13 metric tons of carbon dioxide. That’s nearly as much CO<sub>2</sub> as an average American generates in a year.”<sup>57</sup>



CO<sub>2</sub> emissions per broadcasted hour.  
Displayed by genre and production method.

Data from albert Nov 2014–2015

<sup>56</sup> Kyle Raymond Fitzpatrick, "Behind Every Film Production Is a Mess of Environmental Wreckage", *Vice*, 2019-10-15

<sup>57</sup> Ibid

Yet the excessive production of CO<sub>2</sub> is not the only unwanted by-product of a film production. During the shooting of the film itself, a film crew and all the equipment they drag along can severely harm the environment. A few examples: Chemical waste was dumped in Queensland while filming *Pirates of the Caribbean: Dead Men Tell No Tales* (2017), areas of the African Atlantic coast were heavily damaged (endangering reptiles and cacti) during the shoot of *Mad Max: Fury Road* (2015) and the Maya Bay Beach in Thailand was left in ruins after the crew of *The Beach* had been there (2000).<sup>58</sup> All of this damaging the environment just to present us that one perfect shot or a few seconds that leaves us in awe...

And even if we would move indoors, leaving real locations untouched and filming all of the scenes in a film studio, the damaging doesn't stop there. A 2006 study of the University of California noted that a single sound stage can be responsible for destroying 4,000 hectares of rainforest, because of the industry's habit of using of cheap, lightweight plywood harvested from rainforests.<sup>59</sup> So what, use another kind of wood, you would say? But that is easier said than done. It needs to go up all the way to the producers who determine the budgets, calculating higher prices for sustainable material, where the changes need to take place. And still, it doesn't stop there. "The emissions of a film do not stop once the cameras stop rolling, especially for big-budget productions where journalists, stars and publicists will often fly around the world as part of promotion"<sup>60</sup> as goes for all the big players of the industry who travel from film festival to film festival to sell, buy, promote and mingle.

We need to re-invent the entire industry. We need formidable changes. Changes like, as suggested in the Vice article, introducing an eco-department alongside all the other film departments like the art department, the camera department, the special effects department and so on. The eco-department would focus on individual sets and crews and "work in large and small ways to mitigate the environmental impacts of a production"<sup>61</sup>. And no, the eco-department is not like the villain of film productions: it is the much-needed step towards the motion picture industry becoming less damaging and wasteful. Or, as proven possible by the production of the Matrix trilogy, reusing the material used to create the filmsets. The production company employed a non-profit organisation (the ReUse People) to recycle materials used for the constructions of the sets. This employment resulted in 97.5 per cent of the sets being recycled. In the end, about 1500

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<sup>58</sup> Kyle Raymond Fitzpatrick, "Behind Every Film Production Is a Mess of Environmental Wreckage", *Vice*, 2019-10-15

<sup>59</sup> *Sustainability in the Motion Picture Industry*, University of California Los Angeles UCLA Institute of the Environment, November 2006, California

<sup>60</sup> Kaleem Aftab, "Emission impossible: Why Hollywood is one of the worst polluters" *Independent*, 2007-11-1

<sup>61</sup> Kyle Raymond Fitzpatrick, "Behind Every Film Production Is a Mess of Environmental Wreckage", *Vice*, 2019-10-15



tons of lumber was used to build houses for low-income families and all the steel was reused as well.<sup>62</sup> Back to the Vice article, there were more other interesting suggestions such as putting forward tax credits for in-state filming to reduce the extensive and ever increasing air traveling of film crews<sup>63</sup> and even Oscar awards for sustainable productions.

Good, I think, while reading and writing this. This is good and look at the loads of changes that can be done. Though what hits me is that the Vice article does not believe that these demanded changes will come from the viewers, the consumers and dollar signs of the film industry produces and relies on. "The carbon costs of films and shows are so invisible to the average consumer [...]. No individual is going to choose to watch [a movie] because the production was made sustainably. So those demanding that [the film industry] clean up its act — literally — expect to have a challenge in pushing producers and executives to embrace sustainability."<sup>64</sup> This makes sense to me. It is for an average film consumer difficult to grasp how a film is made in the first place. We go to the movies to escape from such depth of thought and our own realities. My family is fascinated by my stories from the other side of the camera, mesmerised by trying to understand the amount of work that goes into building just one film set that might be part of the final edit for just a couple of minutes. It must thus be even harder for them to imagine the production's carbon dioxide footprint. And moreover, the changes that have the most impact might be just the ones that come from the inside. This is why I do not want to turn my back to the polluting film industry. I want to stay part of it and push for changes from the inside instead of yelling at it from the outside.

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<sup>62</sup> Kaleem Aftab, "Emission impossible: Why Hollywood is one of the worst polluters" *Independent*, 2007-11-16

<sup>63</sup> BAFTA, Albert Report 2018

<sup>64</sup> Kyle Raymond Fitzpatrick, "Behind Every Film Production Is a Mess of Environmental Wreckage", *Vice*, 2019-10-15

## — Conclusion

Can hopeful climate-fiction stories about our future, created with the world-building method, inspire and help moviegoers and serie-streamers to understand their (or their future loved ones) future and activate change in their behaviour? And is it possible to create these hopeful future stories without damaging the environment or contributing to further warming up of the earth? I would like to answer both questions with YES. The latter one is already proven possible, although still a rarity, by films like the Matrix and initiatives like an eco-department. The first question however I have not yet seen proven to be possible. At this moment, whenever climate change filters into mainstream culture, particularly in Hollywood movies it often does so as catastrophe. What we need, in order to make our understanding about our future less cloudy, are stories that look beyond those catastrophes. I do not think hopeful cli-fi films can decide or control what we think, feel or do after having seen such a movie. However I do believe such fictional stories can shape important frames of understanding about our future when they asks: 'How is the world after the crisis?'.

In my opinion, world-building could help answering this difficult question of how the world will look after one or multiple global natural catastrophes. This is a difficult task that needs to be executed with great care in order to get it right. With that I mean is not using climate change as yet another cool backdrop for another cool action movie. But using all the facts and knowledge we have on climate change and visualise a believable future story world from that tabular data. How to achieve this? My suggestion: put together a group of scientists, engineers and researcher at one side of the table - the ones that have the difficult, boring yet real facts and figures about our future - and on the other side a group of production designers, prop designers, painters, visual artists, animators, photographers, directors, scriptwriters - the ones that can give these dry facts a spin and take them into the fictional sphere of moviemaking. This will however, looking at current standards of the film industry, be a lengthy and therefore very costly pre-production phase, which makes it an unattractive investment for movie financiers. And that is not the only unattractive element of my suggestion: many moviemakers believe their audience is only going to movies or streaming series in order to escape from reality and therefore don't want to be confronted with the reality of what the future might bring. Yet, are they right about that?

I think film producers and financiers are underestimating moviegoers and serie-streamers with this capitalistic approach. Moreover, they are constantly feeding them with a traumatic image of the future. Moviemakers in the genre of climate change should try to step away from such pessimistic stories that show an impoverished and totally ruined earth with only a fragment of the population left and instead hand us hopeful films that depict a successful transformation of society. Stories where we have not landed on another planet but live on in our world after the crises. This approach could create a shared public imagination that can help us looking into the future, which helps us to understand what is ahead of us, which in turn might steer our decision making and activate us to adapt our ways of living in order to be prepare for the changes that are coming.

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