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**GROWING UP TO A DISASTER**

*– How the youth conceptualize life and their future in anticipation of climate change*

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### Abstract

Growing up in anticipation of a disaster like climate change could affect people's life in a number of ways. Some might feel anxious, sad, worried or even angry at the previous generations for inducing the issue, as well as the current generations for not dealing with the issue well enough. Others might think of climate change as a future issue they do not need to worry about, many might not care at all and feel indifferent. Some might try to downplay their feelings of worry towards climate change, to feel better about not changing their lifestyles to be more climate friendly. This thesis investigates how the youth conceptualize life and their future in anticipation of climate change. Thus, the overarching research question is: *What does it feel like to grow up in anticipation of catastrophic climate change?*

The thesis theoretical groundwork is built on theory about the adverse impacts of climate change, projections for the future, actions and responses, as well as theory about the public opinion and climate change anxiety. The theoretical aspect is challenged by the empirical findings, which leads to the discussion where the most interesting findings, as well as the most paradoxical findings are dealt with. The teens engaged in this study showed different feelings towards climate change and their futures. Many of them were worried and anxious about climate change consequences, but at the same time, many viewed climate change as first and foremost a 'future problem.' Some said they did not care about climate change, and a few of them said climate change was *nice*, because they wanted warmer weather. These findings guided the discussion towards harmful narratives, how it is like to live in anticipation, a lack of urgency and how many of the narratives were connected to the core issues of the climate change issue.

What seems to be one of the most salient implications found in the thesis is that despite it being clear that many of the participants in the study were concerned in one way or another about climate change, many of them experience a lack of motivation to act climate friendly or change their lifestyles. This conflicting narrative can be traced to a feeling of distance to the impacts of climate change, as many state that they do not think they will feel any impacts in their lifetime, in Norway. However, many also state that they think they will be impacted by climate change, but the issue is too complex and impossible to deal with, so they are reluctant to make great changes to their lifestyles when they are convinced it will not change the outcome.

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## 1. Introduction

Global climate change is creating reactions, actions, and inactions around the globe. Some have lit themselves on fire in protest for continues oil excretions (Helmore:2018), some change their lifestyles drastically (Hackett, 2018), others call climate change a hoax (BBC: 2018), and hundreds of thousands of youths have been cutting class to join a global ‘climate strike’ aimed at the “politicians to tackle the escalating ecological crisis” (Taylor & Brooks, 2019). The youth of today are growing up in anticipation of the impacts of climate change. Although many impacts can already be seen and felt, the harshest consequences are expected to be in the future. Such a sentiment of living in anticipation of disaster can affect the youth of today in a number of ways. They could feel anything from anxious, powerless or indifferent to dedicated or hopeful. Research show that the youth of today conceptualize climate change quite differently than the older generations (Klimabarometeret, 2016): the younger generations often associate ‘climate change’ with future and personal ‘relationships’ and ‘conditions,’ whereas the older generations typically think about ‘weather, melting ice and polar bears.’ (Fløttum & Tvinnereim, 2015) These different perspectives could perhaps be traced to both a difference in information and education about climate change while growing up, as well as the fact that it is the youngest generation that will have to live with the worst future consequences, that is induced by the older generation. Regardless of why there is a gap between ‘young’ and ‘old’ climate change-perception, it is clear that it is time to turn our attention to the youth and their conceptualizations of growing up with climate change.

Greta Thunberg, a 16-year-old climate activist, is begging politicians all over the world to act like the world is on fire. Thunberg and thousands of pupils and students that stand behind her in ‘the school strikes for the climate’, are signalling to the older generations in charge that time is up. The youth of today know, like we have known for generations, that our actions today have consequences for tomorrow. The difference is that ‘tomorrow’ is now creeping closer by the minute. We can already see, feel and report on different consequences related to climate change. Examples of this could be seen in Norway, where throughout most of the summer of 2018 the country and much of Europe, was literally on fire. The summer was characterized by droughts, wildfires, and heat records all over the country. The hot summer forced many farmers to slaughter their cattle due to droughts making it impossible to grow enough food for their stock. The droughts also caused the poorest grain crop harvest in almost 50 years, which lead to record high import of hay and straw (Gangstø, et. al, 2018; SSB, 2019; NTB, 2019). The heat

and droughts also forced the electricity-price to sky-rocket, which affected basically everyone in Norway. Other evidence of current climate change consequences can be seen in relation to extreme weather events such as flooding in India, Bangladesh, Nepal, Vietnam, the US, or droughts in Somalia, and hurricanes and storms across the world. (Tibig & Matias, 2017). However, it is important to underline the difficulties in stating with no doubt that all these extreme weather events are a direct consequence of anthropogenic climate change:

*“The chaotic nature of weather means that it is generally impossible to say, for any specific event, that it would not have occurred in the absence of human influence on climate.”* (Otto, James, & Allen, 2014)

Nevertheless, the science connecting climate change to regional events is growing rapidly. The science of “Probabilistic Event Attribution (PEA), increasingly allows a quantitative assessment of the extent to which human-induced climate change is affecting local weather events” (Otto, James & Allen, 2014). Furthermore, it is proven that an increase in “average temperatures will lead to an increase in the frequency or magnitude of some extreme events” (Otto, James & Allen, 2014). In other words, even if not all of the above-mentioned events are a direct consequence of climate change, they are at least most likely a taste of what is to come.

The consequences placed in ‘the future’ are often referred to as ‘slow onset events’, ‘long term effects’ or a ‘creeping catastrophe or disaster’ and terms close to these. The future consequences include “sea level rise, increasing temperatures, ocean acidification, glacial retreat and related impacts, salinization, land and forest degradation, loss of biodiversity, and desertification” (Tibig & Matias, 2017). However, despite our knowledge about current and future consequences, we keep exploiting fossil fuels and behave like there is no tomorrow. There are many layers to this self-destructing behavior. One major issue is that despite a clear scientific consensus about climate change being manmade, there is a growing body of research that show that only about 50% of the public believe the same (Weber:2010; Vedwan & Rhoades:2001; Dæhlen:2018; Bjerve:2018; Krange:2018; Hult:2018; SSB:2008). Another major issue, is that amongst the ones who believe climate change to be manmade, not many care, and furthermore, amongst those who care, not many are dedicated to acting climate-friendly. Stoknes (2015) note that many care less and less, despite the continues growth in evidence and the information flow:

*“The scientific data and measurements about climate change and global warming are getting stronger and stronger (...) Still, people in many countries seem to care less and less – particularly in wealthy petroleum-based economies such as the United States, Canada, Australia and Norway.” (Stoknes, 2015, p.xviii)*

Stoknes find that many struggles with thinking about climate change due to the distance they feel with the consequences – both in time and geographical location. These perceptions and issues connected to them will be discussed more throughout the thesis.

The research on climate change is extensive. Because climate change has so many repercussions it is a phenomenon that is interesting in multiple fields of research, such as natural science, business and economics, politics, international relations, psychology and other social science fields. Based on the interest in climate change across all these research fields, one can probably assume that it is something that will affect everyone at some point, to some degree. Either through policies that are implemented, natural disasters or events, a tighter economy or a decline in natural resources, and so on. Like already implied, climate change is not so much a question of scientific evidence and consensus anymore, as a normative problem, as the biggest issue at hand now, is how to best respond to climate change. An issue that will be given some attention in this thesis, but the main focus will be how all this research, information and warnings about the future, affect the youngest generation, now growing up as the climate disaster is intensifying.

### 1.1 The aim of the study

There has been little attention given to the younger generation’s experience and outlook on climate change. The most common research topics and focus seem to be with scientific evidence, solutions or responses, political debates, economic consequences and the public perception. There have been many surveys done about the public perception, but very often in relation to their political standpoint, or other factors that might explain their view.

The aim of this study is to turn the focus to the youngest generation, referred to as ‘generation Z.’ Generation Z includes everyone born from 1996 till today. However, this study will focus on mainly 16 to 18 year olds, as they are both old enough to be able to reflect on their life and



their future aspects in anticipation of climate change, and at the same time young enough to provide a perspective of how it is like to grow up in anticipation of climate change. Generation Z are growing up in an 'era of information' and education, and they have already experienced some of the climate change consequences, and furthermore, it is this generation that will eventually experience the harsher future impacts. How does that effect their worldview? The thesis engages with this subject by collecting a number of Norwegian teenagers' views on the matter, and by conducting an analysis of the data collected, looking for patterns in their narratives and their conceptualization of how it is to grow up and live in anticipation of a creeping catastrophe like climate change. Thus, the overarching research question is:

### **What does it feel like to grow up in anticipation of catastrophic climate change?**

The overarching objective of this thesis is to explore how the youngest generation experience and conceptualize their life and their future in anticipation of climate change. It is important to focus on their narratives as they are the ones who eventually have to live through the impacts of climate change. Furthermore, as already mentioned, there seems to be a growing gap between 'young' and 'old' perceptions of the issue at hand. Much of generation Z are too young to vote, and have to watch as the older generations put climate change deniers like president Trump in charge. Meanwhile, thousands of youth rally behind the 'school strike for the climate wave' and they are screaming at the top of their lungs to be heard. The question is, do these images of angry teens in the street reflect the view of the majority of generation Z, or is the picture more nuanced than that?

This study could potentially provide valuable information about how it is to grow up with a wicked problem like climate change 'hanging over your future.' The experiences and narratives of 'growing up to a disaster' could potentially be used as a new point of departure in debates about climate change, political responses, psychological impacts, as well as inspire further research about climate change anxieties, dissonance, ignorance and perceptions in general. Above all, this study could provide a much-needed perspective for the 'future generations' most climate change debates concern themselves with. The youngest participants in this study are 16 years old, meaning if they live to be 81 years old, they will experience life in 2100. In 2100 the temperature is predicted to have increased by 4,5 C in Norway (Hanssen-Bauer et. Al, 2017), and a temperature increase of that magnitude could be disastrous, which will be discussed more

in chapter 2 and 3. The point is to illustrate that generation Z is a generation that will experience climate change first hand, and their narratives could help us understand what future generations will experience as they grow up in a world on fire.

There are some limitations to the study worth addressing. First of all, for better representativeness of the youth's conceptualization and narratives, a bigger sample of answers could be collected. However, due to limitations both in time and willing participants, this was not an option for this paper. Other limitations could be traced to a lack of diversity amongst the participants, as most of them are from the same area in Norway, and many experience the same environments in their local communities and so on. This could affect their representativeness of 'all Norwegian 16 to 18 year olds,' and furthermore, the findings in this study is arguably not suited to be adopted to global scale discussion about perceptions. However, this thesis does not claim, nor aim, to achieve global representativeness, rather this thesis aims to start a discussion of how living in anticipation of climate change can affect the generations that comes after us, not just generation Z but future generations as well, as the problem will most likely intensify, and the impacts of growing up to this disaster will most likely multiply in generations to come.

## 1.2 Delimitation

There are a few topics and issues this thesis touches upon but do not explore or discuss in great detail. To better understand the objective of this study, it is necessary to delimit the study, and discuss what will *not* be done in this paper. This could also perhaps inspire further research or discussions.

First of all, the major theme of the thesis is what it feels like to grow up in anticipation of climate change, meaning the research question is first and foremost seeking a description. The research question does not seek to explain or understand the narratives; however, the narratives will be discussed in light of the analytical model presented in chapter 3, as well as existing theories and research presented in chapters 2 and 3, meaning that some explanation could be suggested, without claiming that these suggestions are the only possible explanations for the narratives. Furthermore, the thesis does not have capacity nor a direct interest in exploring how narratives can be changed, even though this could be an interesting topic for further research.

In addition, the thesis explores topics such as climate change, impacts and projections, responses and limitations, as well as public opinion and anxieties. These topics are not explored in depth, but rather presented to get an overview of the complex problem that is climate change and the mountain of information generation Z is growing up with.

Another delimitation that is worth addressing is the choice to only including 16 to 18 year olds, rather than representatives of the entire generation Z. First of all, generation Z includes everyone born from 1996 till today, making the youngest representatives of this generation, babies and children. Even though it could be interesting to hear what a 4-year-old think about climate change, most likely they would just repeat whatever they have heard from parents or others, if they could answer at all. The choice to exclude children is simply based on the fact that their cognitive abilities are not yet fully developed to be able to reflect on the big questions this thesis deal with. Teens between 13 to 15 year olds could however have been included, as they are more aware of the issues at hand, but they were excluded from this study mostly due to time limitations, and a hypothesis that 16-18 year olds probably could reflect better about their narratives and attitudes than 13 to 15 year olds, as they are more mature and most likely better informed about the issue, from more nuanced sources than is available or interesting to 13 to 15 year olds. The choice to exclude 19 to 23 year olds, are basically solely based on time and resource limitations, as this age group is somewhat harder to include due to their life-situation, they are no longer attending mandatory education, they could be working anywhere, studying anything at any level etc. 16 to 18 year olds are easier to come by, as the majority of them are still in 'high school'(videregående skole). Future studies could engage with both younger and older participants than this study has done, to compare the findings and explore potential similarities or differences.

### 1.3 Structure of the thesis

After this introduction chapter, chapter 2 will address the contemporary context of what narratives the youth are exposed to in regard to climate change. There will be a brief introduction to climate change as a phenomenon, followed by an introduction of the science, actors, projections, consequences and responses to climate change. The aim of chapter 2 is to paint a picture of the many narratives and 'sides' to climate change generation Z are growing up with. And furthermore, to be able to discuss climate change perceptions and conceptualizations it is important to have some background knowledge about the topic at hand. Chapter 3 will present the literature review, picking up the thread from chapter 2, but going into

a more detailed discussion of existing literature. The literature review will also address ‘public opinion and anxieties’ as that is an important topic throughout the thesis. The aim of chapter 3 is similar to chapter 2 – the point is to understand what we already know, to be able to have a productive discussion of the new research. In addition, in the last section of chapter 3 the analytical model will be presented, which is based on much of the observation in the literature review, as well as the findings from chapter 5. Chapter 4 will present the methods used, as well as the data collection process, data reduction and analysis, scientific standpoint and reflections and challenges with the methods used. Chapter 5 will discuss the findings and the results. Chapter 6 will discuss the most interesting findings, what it is like to live in anticipation, harmful narratives, and how many of the narratives found in the study have ties to the core issues of climate change. Lastly, there will be a summary of the findings, some concluding remarks as well as a brief discussion of weaknesses in the study, and suggestions for further research.

## 2. Contemporary context

This section will address some facts about climate change, the different consequences and also what actions and responses are viable, as a starting point for a more productive further discussion in the thesis. It is important to understand what information and narratives of climate change the youth are exposed to, to be able to better understand their narratives.

Climate change is a well-known phenomenon that has been studied and gained a massive body of evidence ever since the 1820s. That was when the scientists began to study the “concept of Ice Age and the Greenhouse Effect” which lead them to realize that the “lower levels of greenhouse gases in the atmosphere caused ice ages, and that higher levels led to the much warmer temperatures” (Mason, no date). Since then there has been an increasing amount of research and evidence for manmade climate change, which eventually lead to scientific consensus stating that climate change is without doubt manmade. Scientists have found that there is evidence in ice cores drawn from ‘Antarctica, Greenland and tropical mountain glaciers’ that show that the “Earth’s climate responds to changes in greenhouse gas levels,” and in addition, there have been found “ancient evidence in tree rings, ocean sediments, coral reefs, and layers of sedimentary rocks (...)” that reveal that the “current warming is occurring roughly ten times faster than the average rate of ice-age-recovery-warming.” (NASA, *Climate Change: How do we know*). Furthermore, climate change can be seen in the “global temperature rise, warming oceans, shrinking ice sheets, glacial retreat, decreased snow cover, sea level rise,

declining arctic sea ice, extreme events, and ocean acidification” (NASA, *Climate Change: How do we know*). As seen, the problem with climate change seems to no longer be the evidence, but rather how to deal with it.

There are many different actors, organizations, treaties and bodies trying to deal with climate change. There are especially two worth mentioning. The intergovernmental panel on climate change (IPCC) and The United Nations Framework Convention on Climate Change (UNFCCC). IPCC is the United Nations (UN) body for assessing the science related to climate change, they ‘prepare comprehensive Assessment Reports about the state of scientific, technical and socio-economic knowledge on climate change, its impacts and future risks, and options for reducing the rate at which climate change is taking place.’ The first assessment report by the IPCC supported the establishment of UNFCCC<sup>1</sup>. The UNFCCC is an international environmental treaty that entered into force in 1994. The objective of the convention is the “stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system. Such a level should be achieved within a time-frame sufficient to allow ecosystems to adapt naturally to climate change, to ensure that food production is not threatened and to enable economic development to proceed in a sustainable manner.” (United Nations Framework Convention on Climate Change, 1992) Different assessment reports by the IPCC has been giving input to negotiations resulting in the UNFCCC adopting new agreements such as the Kyoto Protocol (1997) and the Paris Agreement (2015).

One of the latest reports from IPCC, “Global warming of 1.5 C” (October 2018), aim to map 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.” The report state with ‘*high confidence*’ that global warming is likely to reach 1.5 C between 2030 and 2052 if it continues to increase at the current rate, and that ‘impacts on natural and human systems from global warming have already been observed. Many land and ocean ecosystems and some of the services they provide have already changed due to global warming.’ Furthermore, the

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<sup>1</sup> <https://www.ucsusa.org/global-warming/science-and-impacts/science/ipcc-backgrounder.html>

report claim that some impacts may be ‘long-lasting or irreversible, such as the loss of ecosystems.’ As the report suggest, climate change is a serious and urgent problem in desperate need of solutions, but the problem is so complex and complicated, scientists have classified climate change as a *super wicked problem*. A *wicked* problem is “a problem that one can understand perfectly, but for which there is no rational solution.” A *super wicked* problem, however, is a problem for “which time is running out, for which there is no central authority, where those seeking the solution to it are also creating it, and where policies discount the future irrationally.” (Morton, 2013) Research show that reaching the ‘2-degree target’ formulated in the Paris Agreement is increasingly less likely. The objective of the ‘2-degree target’ is to contain the average global temperature to ‘well below 2 C above pre-industrial levels.’ Some scientists claim that it is only a “5% chance that the Earth will avoid warming by at least 2 C come the end of the century.” (Miliman, 2017) Furthermore, it is very likely that we will burn through “the rest of the 1.5 C carbon budget within the next 3 to 10 years,” and that we are on the track to reach a global warming over 3 C by 2100. (Nuccitelli, 2018). We can no longer discuss how to *solve* global climate change because even “if humans could instantly turn off all our emissions of greenhouse gases, the Earth would continue to heat up about two more degrees Fahrenheit by the turn of the century.” (University of Colorado at Boulder, 2017). Furthermore, climate change is a “disaster that has no well-defined conclusion or end.” (Morton, 2013) In other words, global climate change has become something we have to live through, or with, and we can only discuss how to best contain and respond to the consequences.

### 2.1 Consequences and projections

There are many known, many predicted and probably many unknown consequences to the temperature increase and climate change. Some effects can already be seen: “polar ice shields are melting and the sea is rising. In some regions, extreme weather events and rainfall are becoming more common while others are experiencing more extreme heat waves and droughts.” (European commission, no date) These impacts are expected to intensify in the coming decades, according to the EU. The impact of climate change is hard to comprehend, as many of the impacts have repercussions, for example, the melting ice and rising sea levels cause “flooding and erosion of costal and low laying areas”, and extreme weather and shifting rainfall cause “floods, decreasing water quality, decreasing availability for water resources in some regions,” and the warmer temperatures cause “droughts, wildfires, forest fires, an increase in the number of heath-related deaths” and also “changes in distribution of some water-borne illnesses and disease vectors.” This thesis does not have the capability to cover all the direct,

indirect, economic, physical, social and political consequences of climate change, but it is important to underline that “small changes in temperature correspond to enormous changes in the environment,” which is perfectly illustrated by thinking about the end of the last ice age: “when the Northeast United States was covered by more than 3,000 feet of ice, average temperatures were only 5 to 9 degrees cooler than today<sup>2</sup>.” (NASA, *how the climate is changing*). Thus, it is probably rational to think that only a few degrees warming could cause just as harsh, if not harsher, living-conditions as during the ice age.

Scientists have developed different ‘climate models’ and ‘scenarios’ to help predict what impacts we can expect if the temperature reach certain degrees, for example the ‘2-degree scenario’ or the ‘3-degree scenario.’ Some worry that “even if all countries meet their non-binding targets, some projections estimate global temperatures could still rise by more than 3C, and possibly by over 4C.” Which would have “a devastating effect on the planet, raising sea levels as much as 1.5 meters, putting cities like Amsterdam and New York under water and causing widespread famine.” (Cockburn, 2018) Climate-scenarios are developed for a ‘multitude of reasons’, by many organizations, such as the International Energy Agency (IEA) in cooperation with IPCC, business organizations like the World Business Council for Sustainable Development and companies such as Statoil and BP. (Berg, et. Al. 2018) There has been done a lot of research on the different scenarios and the possible impacts, for example, a study done in 2016 focus on the 1.5 C-scenario vs. the 2 C-scenario, ‘Carbon Brief’ has made this graph based on the study:

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<sup>2</sup> <https://climate.nasa.gov/effects/>



*Infographic: How do the impacts of 1.5C of warming compare to 2C of warming? By Rosamund Pearce for Carbon Brief.*

The graph clearly shows that there will be quite a ‘magnificent’ impact difference, by just 0,5 degrees warmer temperatures. “Some of the most dramatic differences occur with heat extremes, with heatwaves in the tropics lasting up to three months with 2C warming, compared to two months with 1.5C.” (Pidcock, 2016) However, it is worth noting that there could be some positive impacts as well. For example, according to the graph, the Soy and rice production will go up due to the increase of CO<sub>2</sub> on crop yields (Pidcock, 2016). In addition, the production of cotton and wheat are expected to increase an average of 30 % because of the CO<sub>2</sub>-concentration (IPCC, 1998). A study show that the agricultural growing season could become up to two months longer across much of Norway, due to climate change. Furthermore, the study suggest that the forest growth will increase, if climate change continue in its “present course.” (The Research Council of Norway, 2012). However, the report does underline the emergence of new challenges for agriculture as well, such as the increasing risk of frost damage in the crops and



plants, with no clear solution to “what needs to be done to ensure that plants thrive through the entirety of the longer growing season.” (The Research Council of Norway, 2012). Using the “positive lenses” there are also other impacts of climate change one could consider as beneficial, such as cooperation across nations, the creation of new jobs dealing with climate change, technological advancements and more efficient shipping-routes through an ice-free Antarctic (The Guardian, 2011). When that is said, the most common climate-scenarios the public is exposed to are those framed as more or less ‘doomsday scenarios.’ In Norway, there is 3686 articles found on the database ‘Retriver’ that mention the word “klimakrise” (climate crisis), and 122408 articles that mention “klimaendringer” (climate change), so it is fair to say that the media is a big actor in framing climate change, and that the frames are often catastrophic.

## Worst-case climate change scenario could be more extreme than thought, scientists warn

Economic growth could prompt greater greenhouse gas emissions than previously forecast, study says

Harry Cockburn | Tuesday 15 May 2018 21:40 | 1.8K shares | 149 comments

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Even our best efforts at limiting emissions may not be enough to avert disaster (Shutterstock)

## Earth has 12 years to avert climate change catastrophe, warns UN report

### News Stream

Everybody needs to stand up in terms of ambition to fight global warming, says Jim Skea, co-chair of the UN working group that produced a new study with a very unambiguous message. Source: CNN



▲ How South Beach, Miami, could look if temperatures rise by 2C. Photograph: Nickolay Lamm/Courtesy of Climate Central/sealevel.climatecentral.org

## Portrait of a planet on the verge of climate catastrophe

As the UN sits down for its annual climate conference this week, many experts believe we have passed the point of no return  
by [Robin McKie](#)

*Screenshots from different newspapers, showing how climate change is often portrayed and framed, contributing to sentiments of impending disaster.*

The aim of this thesis is not to cover all possible consequences and scenarios, but rather to paint a picture of what framings the younger generations have grown up with in the media and the academic literature. Furthermore, it could be productive to look at what actions and responses are possible, to help understand youth's future outlooks.

## 2.2 Actions and responses

A question many might have after being bombarded with information about what is happening, why it's happening and what is going to happen is: *what is being done, what can be done and what responses are available?* A question that is hard to answer, as there are so many different actors, levels of politics and governance and agendas.

One of the major problems with climate change is that there is no 'global government' to enforce rules and legislations. Climate action is voluntary work, it is a problem everyone contributes to and a problem that eventually will affect everyone. Of course, it is worth mentioning that it is mainly the industrialized and first world countries that have caused the climate to change, and it is the poor, developing countries that will feel the biggest impact first, both due to location, but also because of vulnerability and reliability on the nature for everyday life, and a lack of resources to respond and prevent, or adapt and mitigate.

This paper does not have the capacity to cover all different governance levels, international agreements, industries, companies and institutions that are responding to climate change, but to have a more fruitful and productive discussion, the policy instruments available for national governments will be addressed. The reason for the focus on the national government, is that there is no higher authority with 'legal-power' than the national government, which arguably make the governments around the world one of the most important actors that can deal with climate change.

There are many ways to categorize the various policy tools the government has, such as: "economic, legal and persuasive; detectors or effectors; mandates, inducements, capacity-building and system-changing" (Peters, 2015, p. 102-105), "traditional regulatory approaches", or "command –and-control-measures"; "market based instruments"; and "awareness raising" (EEA). However, this thesis will use the categories 'stick, carrot and sermon', which have a lot in common with the above-mentioned categories. The stick aims to "regulate behavior through laws, penalties, taxes, bans or sanctions." The carrot offer "mainly financial incentives, rewards, and benefits, such as subsidies, grants and tax exemptions" to motivate people to make environmental-friendly choices. And the sermon approach is about "rising awareness through public information and education campaigns, by which the targets of policy are exhorts to

change their behavior through reasoned arguments and persuasion.” (Bemelmans-Videc et al. (1998), cited in McComrick (2018), p.61) What the best policy tool or the best combination of policy tools are, is hard to state, as it often depends on the goal. The governments have to decide on what policy tools to use based on the agenda the government has, which could be to either mitigate or adapt to climate change, or maybe both?

It is common to classify climate change responses as either mitigation or adaptation efforts. Mitigation is about reducing or dealing with the cause for the problem, so in the case of climate change, mitigation efforts are closely linked to greenhouse gas emission reductions etc. Adaptation is about reducing the impacts and consequences, and taking advantage of possible opportunities that comes with the changing climate. Examples of adaptation efforts in relation to climate change could be building ‘flood defenses’ or adapt buildings to withstand future extreme weather events etc. (EU, *Adaptation to climate change*) There have been discussions regarding if mitigation and adaptation efforts can both be viable options together, or if the focus on adaptation options make us forget the mitigation efforts or vis versa. This thesis standpoint on this matter is not relevant, as the main objective is to illustrate that there are no clear solutions or pathways to deal with climate change issues, and that many actors have different agendas making them press for certain options. One example could be big oil and gas companies claiming that the world needs more energy, and that it is impossible without the fossil fuel industry, ‘but not to worry, because CCS-technology is under development.’ Which is true, the problem is just that it is being developed in a very, very small scale, so to continue the fossil fuels extractions or even to exceed current rates, because CCS-technology will fix the pollution-issues, is quite naïve at best, and directly misleading at worst.

To sum up the ‘contemporary context’ of the thesis, there is an uncountable amount of research, evidence and standpoints regarding climate change and all the questions and issues that is connected to it. The younger generations grow up with a continues information flow about climate change, both through their education, the media, information campaigns, business commercials, social media and the internet in general. They are bombarded with hidden and open agendas, they are exposed to media’s often ‘catastrophic’ climate change framings on a regular basis. All this focus on climate change, consequences, responses and scenarios could for sure affect their future outlook, the question yet to be investigated is: how?

### 3. Literature review

This chapter will look at the existing literature on ‘the adverse impacts of climate change’ and the ‘public opinion and anxieties’, before presenting the analytical model based on the theoretical framework discussed.

#### 3.1 The adverse impacts of climate change

The impacts of climate change can be put into an extensive number of categories, such as social, economic, environmental, physical, emotional and geographical. The impacts can also be classified by the time-frame of their occurrence, there is for example a distinction between ‘sudden crisis’ or ‘rapid onset disasters’ and ‘slow-onset disasters’ or a ‘creeping catastrophe.’ The main focus in this section will be the ‘creeping’ and ‘slow’ impacts of climate change, and how they affect responses such as mitigation, adaptation and transformation, and furthermore the limits to these responses.

What is meant by ‘slow’ and ‘creeping’ disaster in this thesis is a disaster that “does not emerge from a single, distinct event, but one that emerges gradually over time, often based on a confluence of different events.” (Adamo, 2011, p.6) Climate change is in itself a ‘creeping disaster,’ as are many of the more concrete impacts connected to climate change, such as droughts, sea level rise, rainfall variability and changes in water availability etc.

Like already mentioned, climate change is a super wicked problem. Two of the characteristics to a super wicked problem is that ‘time is running out’, at the same time as the ‘policies discount the future irrationally.’ These two characteristics are seen in the climate change-problem, in the sense that we are heading for a warming of the planet that cannot be stopped in the near future, and in addition, there is a lack of concrete climate action and emission-reduction compared to making the 1.5 degree or even the 2 degree targets realistic.

There have been many discussions of environmental thresholds in the climate change debate, where many state that at some point, we will reach the point of ‘no return.’ There is of course disagreement to where or when exactly this threshold is, and how dangerous it is to ‘cross the line.’ In 2009 the “planetary boundaries hypothesis” was published, claiming that there are “nine hard global biophysical limits to human development.” The limits concern “land-use change, biodiversity loss, nitrogen and phosphorous levels, freshwater use, ocean acidification, climate change, ozone depletion, aerosol loading, and chemical pollution,” and the hypothesis

suggest that “crossing any of these boundaries may have catastrophic consequences for human welfare.” (Nordhaus, Shellenberger, & Blomqvist, 2012). All these thresholds could be seen in connection to climate change and the ‘creeping catastrophe-frame’ as they have a catastrophic outcome, but the harshest impact is in the future, and they are slowly ‘intensifying’ and moving towards reaching the point of no return. When a threshold is reached, the creeping disaster can become an “urgent crises that are more costly to deal with since the thresholds for reversibility have been exceeded” (Pulwarty & Sivakumar, 2014). This illustrates the point about climate change being a super wicked problem because time is in fact running out as the thresholds are creeping closer, every day.

Another way to classify crisis and catastrophes could be ‘natural’ or ‘man-made.’ However, this classification is often too simple, as many ‘natural’ disasters are caused by man, such as climate change, droughts, sea level rise etc. Based on the lack of ‘sufficient’ crises-categorizations, Gundel (2005) suggest four new categorizations for crises and disasters: *conventional* crises, *unexpected* crises, *intractable* crises, and *fundamental* crises. Using this classification, climate change fit within the ‘intractable crises’ frame, as an intractable crisis is a crisis that can be anticipated but “interference is almost impossible due to the attributes of the systems concerned, making responses difficult and preparedness hard, or the conflicts of interest surrounding them, impending proactive countermeasures.” In simpler terms, the definition for intractable is ‘not easily controlled or directed,’ (dictionary.com) which is a suitable way to describe climate change. Gundel argue that an intractable crisis usually need to be “regulated in an internationally unique fashion” because the crises affect numerous organizations and societies, making “political solutions and regulation represent the most important measures.” As mentioned, the most common political solutions and regulations in regard to climate change are adaptation and mitigation, in addition, some scholars also write about ‘transformation.’ Adaptation and mitigation has already been mentioned, however, it can be productive to discuss these responses further, and also address their limits and challenges, in addition, transformation should be given some attention.

Mitigation is probably the most logical answer to climate change or any problem for that matter. If we know what is causing a problem, stop doing whatever is causing said problem, and the problem will be solved. There are many mitigation-efforts around the world, such as Germany working on phasing out their coal-fired power plants by 2038 as a move away from fossil fuels

(Wacket, 2019). The Kyoto-protocol and the Paris Agreement can also be viewed as mitigation efforts, as there are clear targets and goals in both the agreements about cutting greenhouse gas emissions and strengthen clean energy alternatives. However, there have been debates about how efficient and productive these agreements are, as they have no ‘real’ legal power to enforce their targets and goals.

Mitigation faces different challenges and limitations, and one of the biggest issues with mitigation is that it might simply not be enough to “stave off the adverse effect of climate change.” (Knittel, 2016). In addition, many of the limitations and challenges are related to challenges renewable energy technologies face. Some of the biggest issues with renewable energy technologies are “the upfront costs of building the plant and maintaining it” as well as intermittency in the energy-production, public perception and “longstanding dependence of markets and institutions on fossil fuels.” (BBC, 2014) Another issue with climate change mitigation is that mitigation requires “not only change in policy but an underlying change in culture.” (Brown, 2012) In other words, mitigation more or less require a regime change of the incumbent fossil fuel industry, and also a ‘regime-change’ in people’s lifestyles and life choices, which is a huge challenge to say the least.

Mitigation is about long-term issues and solutions. However, the politicians, cooperate leaders and industry in general, are more focused on the short-term ‘gains.’ This ‘phenomenon’ is called “short-termism,” which refers to “an excessive focus on short-term results at the expense of long-term interests.” (Financial Times, lexicon). Illustrating this point, one can think about politicians who are elected for a short period of time, often two to four years, which influence their politics and policies, as their position of power depend on current affairs and issues. This is related to the ‘issue-attention-cycle’ which will be addressed more when discussing the public opinion.

The earth will continue to warm for years even if we stopped all our emissions today, meaning that some climate change impacts are inevitable and irreversible. Thus, mitigation efforts are not enough on its own, to deal with the adverse impacts of climate change. Brown (2012) argue that the time for a change of focus to adaptation is now:

The limits to mitigation deliver a clear message: It’s past time to begin adapting to climate change with the same effort and specificity that communities invest in preparing for a

coming hurricane or flood. (...) We need to be ready for melting ice, rising sea level, floods, droughts, weather extremes, and changing, stressed ecology. We need zoning and other policies to stop people from moving into low-lying coastal cities and areas that will be more prone to flooding and drought. We need to breed and genetically engineer crops that will handle extremes. We need to anticipate where water shortages will arise and build needed infrastructure or shift how the land is used. We need to protect and manage ecosystems with a view to how they will change and move, preserving corridors for migration and dispersion. We need to establish and maintain a global bank for the DNA and viable tissue for all known species and new species as they are described, as a safety net against extinction. Most of all, we need to fasten our political will to action now. Who knows? If we accept the realities of adaptation, maybe the picture will be so vivid, ugly and expensive that we'll address mitigation too. (Brown, 2012).

Adaptation is like mentioned about reducing the impacts and consequences, and taking advantage of possible opportunities that comes with the changing climate. Adaptation means “anticipating the adverse effect of climate change and taking appropriate action to prevent or minimize the damage they can cause, or taking advantage of opportunities that may arise.” (EU, *Adaptation to climate change*) Adaptation may sound like an easy route to take to ‘stay on top of things’ as the climate change impacts intensify, but it is more complicated than that. Wright, Faget and Geronimo (2017) summarize six challenges in relation to mentoring and evaluating adaptation:

1. No **universal metrics** exist. Climate change impacts a diverse range of sectors and contexts and manifests itself in different forms, from flood to drought to heatwave. As such, adaptation needs, measures and goals are highly context-specific.
2. The risks posed by climate change may intensify in the future, and new threats could arise. Consequently, **the success of adaptation efforts will not be apparent over programmes timescales** as implementation periods are generally too short (typically up to three years).
3. Because multiple actors’ processes work towards increasing adaptation over time, it is complex to determine the specific input of each of them. Moreover, some programmes indirectly contribute to strengthen adaptation to climate change. Others only partly focus on it, and some mainstream it.
4. **Social economic and policy contexts might also evolve and therefor increase vulnerability** to climate change impacts. This makes it hard to determine whether an intervention was successful.



5. Climate-sensitive development metrics, such as poverty or agricultural production indicators, might well improve. However, **it needs to be ascertained whether this is just because climate hazards have been less severe than usual** or whether the interventions have worked. Conversely, if development metrics deteriorate, it is important to determine if the situation would have been more serious had these programmes not been implemented.
6. Interventions often aim to reduce *vulnerability*, enhance *adaptive capacity* or improve *resilience*. These terms are **often used interchangeably but have different meanings** to different people. The lack of universally agreed definition, interpretation and operationalization makes monitoring and evaluation difficult.

To sum up, adaptation faces challenges in regard to climate change being the super wicked problem that it is. It could one day mean that we need to have been prepared for droughts, but the next day we would need to be prepared for flooding. This makes adapting to climate change very challenging, as it can be hard to know what specific events to adapt for, at what location at what time. Another challenge adaptation faces, is the uncertainty about the future impacts as well as the future effect of the efforts: if the outcome is better than expected, is that due to the adaptation efforts or that the impacts were not as harsh as expected? The uncertainty of the future impacts as well as the uncertainty if the efforts work, makes it somewhat challenging to argue for investments in adaptation efforts, as we do not know the exact benefit-cost ratio.

Despite these uncertainties and challenges faced by both mitigation and adaptation efforts, some argue that it is necessary to take our efforts even further, to start a *transformation*. According to IPCC Fifth Assessment Report, transformation is “adaptation that changes the fundamental attributes of a system in response to climate and its effects.” (Dinshaw, 2014) Many experts are discussing if “addressing climate change requires fundamental changes in how our society functions, including paradigm shifts in our values and decision-making.” (Dinshaw, 2014) Dinshaw argues that transformation will have “life-altering consequences, because it is systematic and results from a shift in paradigms and values.” And furthermore, she notes that “with all its complexity, transformation as a concept has the potential to facilitate more effective adaptation. In order to fund, implement, measure and prove transformation in adaptation, funders, practitioners, and researchers will have incentives to work over longer time horizons on interventions that have bigger impacts. However, we should take care not to get side-tracked by the allure of transformation before we have a clear understanding of what it entails.” (Dinshaw, 2014). With all these different approaches, their benefits and challenges, it is not

easy to pinpoint what the best response to climate change is, if there is a good response at all. Moreover, if experts and scientists cannot seem to agree on what we should do about climate change, how can we expect the general public to have a 'static' and simple perception or attitude towards climate change? We can't, and they don't.

### 3.2 Public opinion and anxieties

To better understand how the youth experience climate change and how it affects their future outlook, it is productive to first look at the existing literature about the public opinion about climate change, and also how anxieties about climate change impact people's mindset.

The public opinion about climate change is dynamic, and as a result so are the reports on the public climate perception. One report shows that 46% of the Norwegian public are worried about the impact climate change could have on themselves and their family, and that the environment is something that many are 'occupied' by (Klimabarometeret, 2016). However, the report also show that these issues are often put "in the shadow" by other more pressing short-term issues, such as for example unemployment, falling oil-prices and economic issues. Nevertheless, the report finds that 2 of 3 is concerned what they can do to reduce their environmental impact (Klimabarometeret, 2016). Another report shows that Norwegian's don't trust climate scientists because they think the scientists are affected by their own political views. (Kristiansen 2017). A third report find that Norwegians are not willing to change their travel habits and fly less, even though they are aware of the environmental impacts. (Dæhlen, 2018). To sum up, the public opinion about climate change is fragmented, and somewhat inconsistent, we say we are concerned with what we can do to reduce our environmental impact, at the same time we say we do not want to fly less.

One interesting aspect of the public opinion is that there seems to be a gap between attitudes and opinions towards the environment, and what people are willing to do to reduce their environmental impact. In SSB's report, 'verdiundersøkelsen' (2008), they explore this gap, and find that many agree on certain objectives, such as reducing unemployment or reducing environmental degradation, but there is often disagreement how to proceed to do so. SSB further state that many do not 'bother' to make an effort in reducing their emissions, as individual efforts have marginal effect on the global climate change, which create a 'chain-effect' of people who are not willing to change.

Stoknes (2015) find that people use five different ‘psychological barriers’ to “keep climate messages away” (p.81). The first is *distance*, most of us do not experience climate change up close in our everyday life, there is a distance both in time (future impacts) and geography (melting glaciers etc.), making it easier for people to not pay much attention to climate change. The second ‘barrier’ is what Stoknes call *doom*, he argues that the doomsday and catastrophe framings of climate change result in a wish to avoid the topic all together, especially since the sense of hopelessness and the lack of solutions become very overwhelming. The third barrier is *dissonance*, which often occur when “what we know (for instance, our fossil fuel energy use contributes to global warming), conflicts with what we do (drive, fly, eat beef or heat with fossil fuels) (...), but by downplaying what we know (the facts), we can feel better about how we live.” (p.82). The fourth barrier is *denial*, which many ‘turn to’ to avoid guilt and fear. The last barrier is what Stoknes refer to as *identity*, which refers to the way we filter news and information through our ‘professional and cultural identity,’ “we look for information that confirms our existing values and notions, and filter away what challenges them (...) If new information requires us to change ourselves, then the information is likely to lose. We experience resistance to calls for change in self-identity” (p.82). These barriers illustrate the complexity of the climate change problem, it is not just an external and practical problem for scientists and politicians to deal with, but furthermore a core issue within each and every one of us, as everyone has to take their own standpoint as to what they think about climate change and what they want to do about it. The complexity of the public opinion and the politics of climate change will be further explored using the ‘issue-attention cycle’ and ‘the cycle of impact.’

The Issue-Attention Cycle is a “five stage cycle of media attention and public interest regarding a particular issue.” (Lovett, 2011) The five stages are *the pre-problem stage*, when “most people aren’t yet aware of the issue but experts or interest groups might be”; *Alarmed discovery and euphoric enthusiasm*, when “the public suddenly becomes aware of and alarmed about an issue”; *Realizing the cost of significant progress*, when “disillusionment sets in once people realize how much it will cost to solve the problem, not only in terms of money, but also through sacrifices by large groups of the population”; *Gradual decline of intense public interest*, when people realize what cost the solution to the problem will be, they usually either get discouraged, feel “threatened by thinking about the problem, so they suppress such thoughts” and some

become bored by the issue, either way, other issues “start to get more attention instead”; *The post-problem state*, “the problem gets moved off into a ‘twilight realm of lesser attention.’ But things are not the same as before – new institutions, policies and programs are in place, and any issue that has been through the cycle is more likely to get attention again at certain points.” (Lovett, 2011) We can clearly see that climate change is in the ‘post-problem stage’, as it gains attention at certain times, before it moves to the back of our head for a period of time.

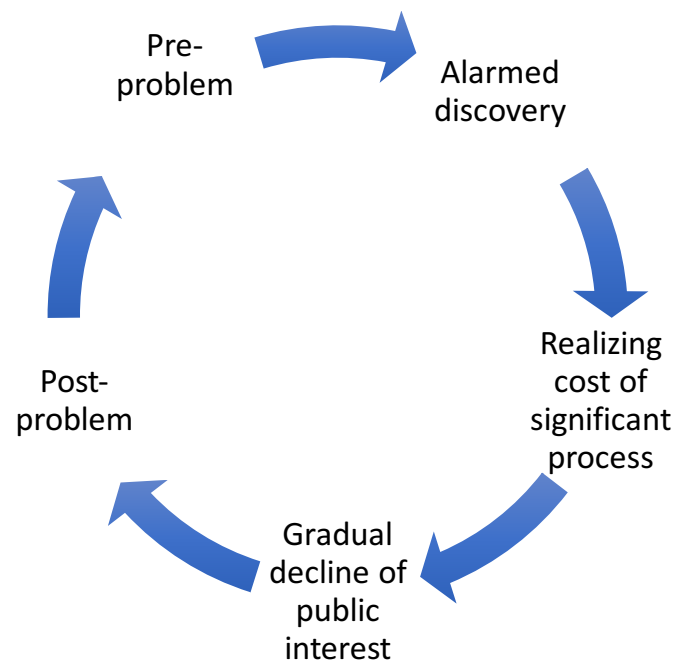


Figure 1: *The issue attention cycle* (illustration based on Downs, 1972)

The main idea to take away from the issue-attention cycle, is that if a problem is too complex and too complicated and costly to solve, eventually the public interest and attention will fade, and another more pressing issue will take the ‘spotlight’. This can become a problem as the public opinion and the problem ‘they’ are concerned with dictates what is on the political agenda. To illustrate this point even further, one could think about a ‘cycle of impact.’ Like discussed earlier, climate change requires a regime change of the incumbent fossil fuel industry, and also a ‘regime-change’ in people’s lifestyles and life choices (at least according to the transformation-pathway), which is unlikely to happen ‘on its own.’ To change people’s lifestyle and life choices, the best approach, is (probably) to use policy tools such as ‘the stick,’ maybe in combination with the ‘carrot’, such as have been done in Norway with toll-road payments and the free passing for electric vehicles. However, for politicians to implement policies, they

have to be elected to a position of power to do such, meaning they need the public support. Many politicians are often elected for a short period of time, resulting in a short-termism-mindset, as their position of power depend more on current affairs and issues. If the majority of public do not support ‘green changes’ and mitigations, the politicians elected, and in extension of that, the policies they implement, will not focus on mitigation or green options either, so the cycle of impact can be hard to ‘break.’

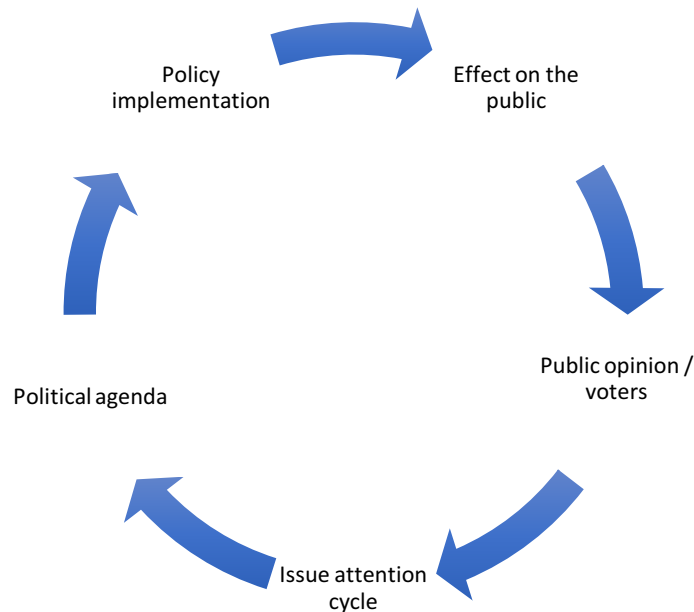


Figure 2: *cycle of impact* (thesis author)

The cycle of impact explained:

- 1) Policy implementation: a policy is implemented, for example a toll road-instillation.
- 2) This policy has an effect on the public, for example it is more expensive to travel to work.
- 3) The effect will have consequences in regard to what the public opinion is about political parties or even individual politicians that voted for implementing the policy. This might impact the next election.
- 4) The public opinion and voters go hand in hand with the issue attention cycle like discussed earlier. Super wicked problems like climate change can lose attention to smaller more apparent issues. Thus, implementing toll road-policies are not seen in

connection to emission reduction and a “zero growth in traffic” as the recent goal for toll-road implementation in Rogaland (Norway) was, but it is rather seen in connection to unfair treatment of those who are affected by the policies.

- 5) The issue attention cycle and the public opinion have a huge impact on the political agenda, as the politicians want to keep their position of power.
- 6) The political agenda determines what policies are implemented.

The objective of the ‘cycle of impact’ is to illustrate that climate politics and policies are hard to implement without support from the public. At the same time, one could probably say that there is a need for strict policies to ‘force’ people to change their lifestyles to reduce environmental degradation, making the ‘cycle of impact’ a big challenge when it comes to climate change. The cycle could be broken if the public rally behind the climate change ‘mission’, which actually seems to be happening more and more these days. Big corporations and companies are focusing on a ‘greener’ image, many big celebrities are promoting sustainable options, and like mentioned, the youth are gathering in the streets to strike for the environment. What is yet to be seen is if this engagement can affect the political agenda enough to result in policy implementations, which again can affect the rest public and their behavior, creating a new, positive cycle of impact. A positive climate change cycle of impact is much needed, if you ask those who are suffering from climate change anxiety.

Psychologists report that there is a rise in people “suffering from climate change anxiety or eco-anxiety.” (BBC, 2019). Psychotherapist Steffi Bednarek explain that climate change anxiety is an ‘anxiety that is about the future, and trauma that we have not yet experienced, but that we know is coming our way’ (BBC, 2019). According to the ‘Climate Psychiatry Alliance,’ climate instability “is one of the most urgent public health threats of the 21<sup>st</sup> Century,” and “mental health is profoundly impacted by the disruptions associated with climate change.”<sup>3</sup> Anxiety and anticipation are two terms closely linked. Anxiety is about being anxious about something that could happen, and furthermore, living with anticipation of the catastrophic impacts of climate change is what is causing the anxiety in the first place. However, one could argue that anticipation could help with the anxiety as well, because if we are anticipating something to happen, one can prepare and limit the impact, which is linked to the much-discussed mitigation and adaptation-efforts. It is important to note that anticipation is a complex

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<sup>3</sup> <https://www.climatepsychiatry.org/new-page-1>

‘phenomena,’ not only can it cause both anxiety and hope, but it takes a lot of work to “optimize, to live in preparation, to anticipate – to gather information, calculate, consider, plan, foresee, decide, act and so on.” (Clarke, 2015, p.90) What is interesting to investigate further, is whether or not the Norwegian teens that participated in the study conducted for this thesis also experience climate change anxiety as they are living in anticipation of the future impacts. As we will see in the next subsection, the feeling of anxiety and sadness will be suggested as one of the themes for analyzing the data material.

### 3.3 Analytical model



Figure 3: *The analytical model* (Thesis author)

This analytical model is based on the data collected to answer the research question, as well as the theoretical framework that has been presented in the thesis. Based on the theory that has been discussed, there seems to be three overarching “perception-frames” emerging: Climate change is a current and urgent problem, climate change is a future problem and climate change is not a problem. Let us start by looking at the last narrative: climate change is not a problem. First of all, this narrative coincides with the research that show that almost half of the public do not believe in manmade climate change, in addition this narrative touch upon many of Stoknes’ (2015) theories. This will be explored even further in chapter 5 and 6. On the other hand, the ‘urgent and anxious’ narrative can be traced to the discussion about climate change anxiety, public perception, and even the issue attention cycle, as climate change has received a lot of attention while the study was conducted, especially generation Z has been in the centre of this attention because of the school strikes for the climate. The narrative of ‘a future problem’ can



also be traced to Stoknes' theories about barriers to climate action. In addition, the narrative of viewing climate change as a future problem can be connected to much of the research about impacts and consequences, future scenarios, adaptation, mitigation and transformation. Furthermore, viewing climate change as a future problem can both be related to the other two categories, as thinking about a problem in the future can trigger both anxiety, hopelessness, and a careless attitude. The analytical model will be used to discuss the findings of chapter 5, but first the methods and the scientific standpoint of this thesis will be discussed.

#### 4. Methods and research design

This chapter will look at the methods used for the data sampling and analysis, and discuss reflections and limitations with the approach chosen. The research design will also be addressed, and the scientific standpoint of this thesis will be dealt with.

The data sampling was conducted by giving 75 high school students two questions that they were to answer in their own words on their laptop. The study was anonymous, they only wrote gender and age on their document. When the students were given the assignment, they were encouraged to write their honest thoughts and try to explain why they had these thoughts. The students were asked to write in their own words their reflections about these two questions:

- 1) What are your thoughts about climate change?**
- 2) How do you think climate change can impact your life and your future?**

The method used for the data-sampling was of qualitative nature, as the students were given open-ended questions and asked to answer them with their own words. However, one could argue that because there was no opportunity to ask to follow up questions and have a discussion, that the approach was also of a somewhat quantitative nature. This approach used the best of both worlds of qualitative and quantitative research methods: because the students were allowed to write with their own words they did not get affected by the 'answer-options' in the same way as one can be when filling out a questionnaire, in addition they were not limited to certain topics, they could write whatever they wanted about climate change and their experiences. The fact that they were free to write about their own thoughts resulted in a lot of valuable input many might never have thought to ask them about. Furthermore, because the approach was also of quantitative nature, more participants could answer the questions without spending more time and effort, as large groups could answer at the same time. The time saving aspect was also

a positive in another way, as there was no need to transcript notes and recordings of individual interviews.

There are two arguments for sampling the data via a writing session rather than interviews. First, it makes it easier to collect more data, it is less time consuming. Second, the idea was that the anonymity offered by the writing-session could result in more honest answers. If people are interviewed they can be affected by thinking about what they *should* say or think, not what they actually do. The down-side to this approach is however not being able to discuss and ask follow-up questions if the students find it hard to answer. In addition, in the spirit of anonymity some might find it tempting to write unserious and “funny” answers, this was however expected, so to make sure to get enough serious answer the sample of students were bigger than it might have needed to be. In spite of the expectation, there were surprisingly few unserious answers, so the data sampling and collecting were quite successful.

The argument for not sampling the data via a questionnaire is like already implied, that a questionnaire would not give the student the opportunity to explain their thoughts in their own words, and it is hard to make options to the questions that fit everyone, and the information would be limited.

#### 4.1 Choice of Research Design

There are some common classifications of research designs, such as *experiments, social surveys, field work, case study, comparative/historical study, action research, evaluation research and impact assessment* to mention some. (Blaikie, 2010, p. 40) However, Blaikie (2010) argues that the standard classifications of research design are not particular productive, because the classifications are not mutually exclusive, it is possible if not necessary to use more than one approach, a comparative/ historical study can contain surveys and case studies, for example. Therefore, he argues that the best approach for a research design is to answer these questions: “What will be studied? Why will it be studied? And how will it be studied?” (p. 41) This approach is being adopted by this thesis as well when discussing the research design.

What will be studied?

The study will concern itself with how young people experience, narrate and conceptualize life and the future in anticipation of the impending disaster that is climate change. The research

question is like mentioned: *What does it feel like to grow up in anticipation of catastrophic climate change?*

Why will it be studied?

This topic will be studied because it is necessary to gain an understanding of how climate change impact feelings and narratives of the future for our youngest generation as well as for the future generations. The study is conducted in the midst of a climate change movement and uprising amongst many teens and students fighting for ecological responsibility. In other words, the study is very relevant and applicable for the issues society face today, and certainly for the issues society will face ‘tomorrow.’

How was it studied?

To be able to answer what it feels like to grow up in anticipation of climate change, it was necessary to collect information about this topic, by asking representatives from generation Z what their thoughts on the matter was. First, an assessment was made that the best way to come in contact with possible candidates to participate in the study, was to contact different high schools and ask permission to conduct the research during their classes. This was challenging, as not many high schools were positive to the inquiry. However, in the end, 4 teachers agreed to let their classes participate in the study, resulting in 75 participants answering. The participants were asked to answer these two questions in writing:

- 1) What are your thoughts about climate change?
- 2) How do you think climate change can affect your life and your future?

The participants were free to answer as detailed or as simple as they wanted, about 20 minutes were set aside for them to answer. There are some challenges to this method worth noting. People could be confused by what they are supposed to discuss and answer, as they are given very open-ended questions. They could struggle with answering anything at all. To help avoid this happening, the researcher was present when the participants were writing so that potential questions could be answered. Furthermore, the researcher gave a brief introduction to the topic and the aim of the study, before handing out the questions to the participants. To help them understand what they could write about, some examples were mentioned for them. It was made clear that the study was interested in their personal feelings and narratives of

climate change, and it was suggested that ‘maybe you are anxious about it, maybe you do not care about it, maybe you think it will affect your children or grandchildren, maybe you think you will experience more natural disasters etc.’ to help them start thinking about the different possible topics. Furthermore, they were encouraged to write a bit about why they had certain feelings, so it could be easier to understand why some for example answered: ‘I don’t care.’

The questions were purposely ‘formed’ very open to allow for the respondents to write their own reflections and feelings. After the data was collected, a thematic analysis was conducted and the findings were discussed.

#### 4.2 Data reduction and analysis

The data reduction and analysis were conducted by performing a thematic analysis. Thematic analysis is a method for “identifying, analysing and reporting patterns (themes within data) (...), it minimally organizes and describes your data set in rich detail. However, frequently it goes further than this, and interprets various aspects of the research topic.” (Braun & Clarke, 2008) Braun and Clarke (2008) has developed an easy overview of the ‘phases of thematic analysis’ that was used to help guide the analytical process of this thesis:

Phase	Description of the process
1. Familiarize yourself with your data	Reading and re-reading the data, noting down initial ideas
2. Generating initial codes	Coding interesting features of the data in a systematic fashion across the entire data set, collating data relevant to each code
3. Searching for themes	Collating codes into potential themes, gathering all data relevant to each potential theme
4. Reviewing themes	Checking if the themes work in relation to the coded extracts (level 1) and the entire data set (level 2), generating a thematic map of the analysis
5. Defining and naming themes	Ongoing analysis to refine the specifics of each theme, and the overall story the analysis

	tells, generating clear definitions and names for each theme.
6. Producing the report	The final opportunity for analysis. Selection of vivid, compelling extract examples, final analysis of selected extracts, relating back of the analysis to the research question and literature, producing a scholarly report of the analysis.

Table 1: *Phases of thematic analysis*. (Braun & Clarke, 2008)

Harding and Whitehead (2013) describe the methods used in this thesis as ‘circling and parking’: “the analysis process is about understanding the overall themes in the data set. These themes can only be ascertained appropriately by having a ‘feel’ for the overall meaning of the whole set of data. (...) ‘you know you have found a theme when you can answer the question of ‘what is this an example of?’” (p.151). Many attempts were made to have a productive data reduction, and to find the themes within the data set. The first step was to note down keywords from each data sample that were important, and if some of the participants mentions the same keywords, that would be noted as well. Afterwards, some lines could be drawn, and some themes emerged that could be connected to the theory from the literature review, which helped form the analytical model presented in chapter 3. The themes will be discussed more in chapter 5.

#### 4.3 Scientific strategy and assumptions

This thesis is based on the inductive research strategy, which is a strategy that aims to “establish limited generalizations about the distribution of, and patterns of association amongst, observed or measured characteristics of individuals and social phenomena.” (Blaikie, 2010, p. 83) Furthermore, the ontological and epistemological assumptions should be addressed. First of all, there are many types of ontological and epistemological assumptions, and it is hard to place the assumptions this thesis is built upon into just one neatly defined type or frame. When that is said, there are some points from the *subtle realist* (ontology) point of view that this thesis operates with. Blaikie (2010) argues that the subtle realist believes that “an independent, knowable reality exists independently of social scientists” (p.94). This can be seen in this thesis as well, as this thesis standpoint is that

manmade climate change is *real*, or the *reality*, even if some believe it or not, this reality is not affected by cultural assumptions, social science or the way we experience life.

Furthermore, some points from *conventionalism* (epistemology) can be traced to the standpoints adopted in this thesis. As Blaikie (2010) argues: “Scientific theories are created by scientists as convenient tools for dealing with the world” and “theories do not describe reality; they determine what is considered by the scientists to be real.” (p. 95) These two statements reflect that the theory and discussion in this thesis, describing how it feels to grow up ‘with’ climate change, is only what this thesis author consider to be the real and correct way of describing and analysing the data material. There will be no claim in this thesis that this is the only correct approach to deal with the research question, and it would be very interesting to see how other researchers would analyse the data material. Further research and comparison is in fact encouraged by this thesis author.

#### 4.4 Methodical reflections

Before wrapping up this chapter it is necessary to address the validity, reliability and generalizability of the data material and the approach. When discussing these topics, the approach in both data sampling and analysis will be classified as ‘qualitative,’ to have a more productive discussion. Even though there are, like mentioned, some quantitative ‘hallmarks’ on the approach, it is mostly qualitative, as the approach is based on the thematic analysis. There are many ways to check the quality of qualitative research, one of them is to assess the validity, reliability and generalizability of the research, which is what this chapter will attempt to do.

*Validity*, in qualitative research validity means ‘appropriateness’ of “the tools, processes and the data.” (Leung, 2015) Of course, it can be hard to argue for one approach being more appropriate than all the other possible approaches, so the best one can do is probably to explain why the choices have been made. In this thesis the thematic analysis, as well as the data sampling method of open-ended questions, were both chosen because there is no simple answer to what it feels like to grow up with climate change, and it was necessary to look for themes in very open data material. It was important not to give the candidates of the study answer-options, but to let them reflect what their exact personal thoughts were. This approach is very appropriate, as the idea was to collect honest answers from as many participants as possible, to paint a picture of what their feelings towards climate change and their future are. *Reliability*, in qualitative research reliability “refers to exact replicability of the processes and the results. (...) The essence of reliability for qualitative research lies with consistency. A margin of

variability for results is tolerated in qualitative research provided the methodology and epistemological logistics consistently yield data that are ontologically similar but many differ in richness and ambience within similar dimensions.” (Leung, 2015) In the execution of the study, there were a great focus on consistency, every candidate received the exact same questions and information about the study. If someone were to replicate the study, they could of course receive some different answers, as this is a study of individual experiences and narratives, but if they would use the same questions as this study did, most likely they would see some of the same themes emerge. *Generalizability*, to assess the generalizability for qualitative research one can “adopt the same criteria for validity: that is, use of systematic sampling, triangulation and constant comparison, proper audit and documentation and multi-dimensional theory” (Leung, 2015). As earlier discussed, one of the weaknesses of this thesis is that despite having a ‘large’ number of participants (75), is that it is hard to argue for representativeness for ‘everyone else’ in the same age group. Because the subject of this thesis is their individual feelings, it is not easy to generalize this. However, the themes that has emerged from the study and thematic analysis of the data material, are maybe more representative of a bigger sample of at least Norwegian teens. It would be very interesting to see if these themes found amongst the teenagers in Rogaland in Norway, would be the same found in Oslo, Hordaland or Nord Norge.

Not everyone finds this approach the best way to assess the quality of qualitative research. Golafshani (2003) suggest that validity and reliability in qualitative research should be reframed and conceptualized as “trustworthiness, rigor and quality” (p.604) Golafshani argue that the best way to achieve validity and reliability in qualitative research is to “eliminate bias and increase the researcher’s truthfulness of a proposition about some social phenomenon using triangulation. The triangulation is defined to be a ‘validity procedure where researchers search for convergence among multiple and different sources of information to form themes or categories in a study’” (p.604). The approach of triangulation has not been used in this thesis, although the data material was analysed using different point of departures several times to try to identify themes and categories, as well as using existing theory to try to make sense of the findings. For further research on this topic, the triangulation approach could perhaps be considered.

## 5. Findings

75 teens participated in the study, resulting in a various of different answers and narratives. To try to make sense of it all, it was necessary to try to find common ground between the participants. One of the first observations made looking through the data is that not many believe they will be directly impacted by climate change in their life time, the majority mention that they are worried for the next generations. However, some of the participants believe climate change will affect them personally, some mention they anticipate more natural disasters, more extreme weather, bigger variations in temperature and weather as well as sea level rise and 'warmer' weather in general. A few of the participants mention that they think a warmer climate in Norway would be nice. Some of the candidates believe they will be affected more indirectly by politics and legislations, or that they will experience indirect impacts due to consequences in other countries forcing people to become 'climate refugees.' Through all these very different narratives, three overarching narratives of climate change stand out:

- Climate change is a current and urgent problem.
- Climate change is a future problem.
- Climate change is not a problem.

To better understand these narratives, it was necessary to try to organize the feelings and points made by the participants into more detailed categories. The first step was to write down certain keywords that stood out, while reading the material. Some of the keywords were as follows:

- Anxious
- Sad
- A future problem
- Positive – warmer weather
- Exaggerated
- Hopeless
- Do not want to change, individual behaviour
- Believe in it, don't care about it
- Don't believe, don't care



Furthermore, it was necessary to divide between the participants that believed in manmade climate change, those who did not, and also address if they seemed to care about the issue at hand or not. This chart was made to help organize the information: (Some of the answers were hard to place in just one category, and have therefor been placed in two categories if the answer demanded that.)

	<b>Believe in manmade climate change</b>	<b>Do not believe in manmade climate change</b>
<b>Care / anxious / sad</b>	22	1
<b>Don't care</b>	8	3
<b>Care, but do not want to change individual behaviour</b>	6	
<b>Hopeless</b>	12	
<b>(Care), but will not impact me, a future problem</b>	16	1
<b>Nice, warmer weather</b>	6	
<b>Exaggerated</b>	3	1

Table 2. *Categorization of informant's responses* (Thesis author)

Almost all of the participant expressed their experience in a way that would fit within at least one of the overarching categories mentioned ('climate change is a current and urgent problem; climate change is a future problem; and climate change is not a problem.') However, there are some cross-over with the "climate change is a future problem-narrative" and the two others, as viewing climate change as future problem could make you both think of it as 'not a problem' as well as an 'current problem' if you think we should help the future generations. To deal with this dilemma, and to understand the findings in more depth, more categories were added in expansion of the three main themes, which can be seen in the analytical model. The analytical model will help guide the structure of this chapter, which will contain a discussion of the results and the findings in the data material, as well as samples from the answers with some discussion, and last but not least, this chapter will attempt to answer the research question: *What does it feel like to grow up in anticipation of catastrophic climate change?* The chapter is divided into the three main-narratives, and a fourth subsection discussing the research question.

### 5.1 Climate change is a current and urgent problem

The first narrative that will be explored is the conceptualization of climate change as a current and urgent problem. Many of the participants had this narrative, but they were somewhat divided on their feelings of this narrative. Some expressed feeling sad, anxious and worried about climate change and their future prospects, others described a sense of hopelessness, and some expressed a demand that ‘we need to act now!’

#### Anxiety and worry

22 of the 75 candidates expressed that they were worried and anxious about climate change and their future. Many also described the situation we are in today, and the situation we put our future generations in, as sad. One of the participants in the study (candidate 10) says she thinks it is scary that people do not take care of the only earth we have, and that it is soon too late. She further describes her feelings towards climate change as anxious and worrisome. Furthermore, she writes that it is scary that the ice is melting, because the sea level can rise, resulting in even less habitable surface and land for us to live on, on our already ‘overpopulated earth.’ What we can derive from this answer is that candidate 10 has somewhat of a doomsday-narrative, as she talks about it being too late soon, and a lack of land to live on, and overpopulation. In addition, this candidate uses words as ‘scary’, ‘anxious’ and ‘worried’ throughout her answer, which paint a picture of the future in quite dark colours. Candidate 1 share some of these feelings, as she is worried about having children in the future because climate change ‘can destroy the future’. In addition to worrying about the future generations, she expresses a deep worry for the animals:

“My thoughts about climate change is that it is very sad, because we are ruining for those who come after us, and a lot of wild life is exposed. (...) What I am the most stressed about is all the plastic in the ocean! Think about all those poor animals that have to suffer because of our actions” (candidate 1).

Many of the candidates share this narrative, and say they feel bad for the animals that we are impacting. Candidate 1 also argues that climate change could potentially affect everyone in the future, if we all have to change our lifestyles. The future outlook for those of the candidates that share the anxious and worried-narrative, are throughout the data material somewhat similar, they either mention direct impacts such as natural disasters and extreme weather, or more

indirect impacts such as changes in politics and changes in producer and consumer habits, by for example replacing all plastic products etc.

In Chapter 3, climate change anxiety was discussed, and a question was raised – do the participants of this study experience climate change anxiety as they are living in anticipation of the future impacts? The simple answer is yes, some of them do. For example, candidate 35 writes:

“I am worried that climate change could lead to war because there will be a fight for the resources, because we can’t grow food everywhere we used to. The Norwegian public resources and income are largely based on fossil fuels. So, when we now have to reduce our use of oil, chances are that this will impact the economy of our country. In addition, I think we will experience more extreme weather events as well as more natural disasters.”

Candidate 35 is not only worried about extreme weather and natural disasters, but he is also worried how people will respond to recourse-insecurity, as well as how climate change will impact the economy of Norway. Candidate 37 also express anxiety in her answer:

“I think climate change is something scary that is happening right now. I feel that many politicians don’t see that it is happening. I am 16 years old, the things I think about most in my life right now is not exactly climate change, the only thing most teenagers think about is school, friends and everything else that our teenager-life contains. The reason we maybe do not think so much about climate change is that we do not have a lot of power to achieve change in how our country and the world should deal with climate change. I do not believe many thinks about what is happening to our climate, furthermore, I do not think they concern themselves with what we can do to help. We probably contribute a small amount by for example being aware of recycling our waste and other small efforts like that. But then again, I can’t personally do much to stop climate change on my own. I believe climate change is manmade, but it is people who don’t bother doing anything to change it. My thoughts about the future is that the politicians will deny that climate change is happening, until climate change become so bad that people are dying. Before we know it, we all die of extreme weather and other

impacts climate change can bring about. I think it is very scary to think about an uncertain future. We do not know what resources we have in the future.”

It is especially at the end of her answer we understand her anxiety: ‘before we know it, we all die of extreme weather and other impacts climate change can bring about’ and ‘I think it is very scary to think about an uncertain future.’ What we can learn from the answers from candidate 35 and 37, is that climate change anxiety comes in all shapes and forms, some are experiencing anxiety linked to the direct impacts of climate change (extreme weather and natural disasters), others are anxious about the indirect impacts (economy, resource insecurity, war and conflict). However, regardless of what *exactly* they are anxious about, the anxiety is linked to what they are *anticipating* from the future, as well as the uncertainty. If you think about it, many horror films build on these feelings of anticipation and the unknown, and most of the time, it is much scarier to watch a movie without knowing what the monsters look like, compared to watching a movie where you see the monsters from the start. So, growing up in anticipation of climate change, could perhaps feel like you are watching a movie with scary horror music, you know *something* is going to happen, but exactly what to expect and how to feel about it, is up to your imagination. No wonder climate change anxiety is a growing issue.

### We need to act now!

There are many candidates that share a conceptualization of climate change as a problem that we need to fix, or at least try to fix. Many of the candidates that mention a need for change, also mention feelings such as anxiety and worry, so there is some overlap in these subcategories. Nevertheless, there seems to be a somewhat divided opinion about which changes and actions that should be prioritized:

“It is scary to think about what we are doing to the climate. We are destroying the planet without even thinking about it. Everyone should do a little to preserve the environment, that is something everyone can manage.” (Candidate 72).

“I am just waiting for *someone* to start a change, then I can just join in” (Candidate 12).

“Scientists will probably find out a thing or two that could save the planet, but I think it was too late many years ago. (...) A lot of CO2 emissions come from agriculture and food and water production to the farm-animals (...), so if we could manage to reduce our meat-consumption there would be a drastic emission-reduction.” (Candidate 34)

“Society look at the wrong things as the problem with the climate. People in the cities are telling us we need to stop eating meat because agriculture is polluting, but they don’t think about that they are flying all over the world with airplanes. I think it is wrong to tell us to stop eating meat, as it is much worse to fly. (...) I think we should focus on changing people’s habits of ordering stuff from other countries, just because it is cheaper, and also not travel on vacation all the time.” (Candidate 45)

“I think climate change can impact me negatively, and if we do not change the way we live the earth will be destroyed. The future does not look bright in regard to the environment, but it is not too late to change our way of life to make the environment better. We can for example start to drive electrical cars instead of fossil fuel-driven ones. When it comes to planes, I think we should still fly as much as we want, but we should maybe find ways to develop electric planes instead of planes using many tons of fossil fuels that cause a lot of CO2 emissions.” (Candidate 52)

What we can derive from these very different answers is what is the core-issue also found in the realm of climate change politics: *yes, we agree that climate change is a problem that needs to be responded to, but what the best course of action is, we do not agree on.* Especially candidate 45 and 52 touch upon an important point of view: We know there needs to be a change, but not this specific thing that I like to do (travel or eat meat), because that is inconvenient for ‘me’. This mentality can be traced through many of the answers the teens provided, as well as the “not in my backyard” (NIMBY) debate. One candidate was quite reflected on this particular issue:

“I don’t think we will commit to any drastic changes in our environmentally degrading behaviour before we see even greater impacts of climate change. I think many believe they will never experience any consequences in their life time, and therefor are reluctant to act. Of course, we have to do something about climate change, but I myself can’t manage to think I have to be aware of my lifestyle to preserve the environment. I think many thinks like me, we ‘talk the talk, but don’t walk the walk.’

I think climate change will impact my life and my future greatly. I still have many decades left of my life on this earth, however, since we in just a few decades previously have managed to destroy so much of the environment, we need to commit to drastic changes for the next generations to survive.”

(Candidate 23)

Candidate 23 is honest about struggling with changing her lifestyle, and she does not ‘shift’ the focus to changing another issue that is not as important to her, like candidate 45 and 52 does by saying we should continue doing what they enjoy (eating meat or flying), but change something else. Candidate 23 state that drastic changes is needed, but her perspective is somewhat doubtful that we will commit to these changes before we have a clearer motivation (bigger impacts). Her answer fit within multiple narratives, there is a sense of ‘we need to change’, ‘anxiety’ and ‘hopelessness.’ Many of the points made by candidate 23 can be traced to other candidates that have adopted the ‘hopelessness frame,’ for example the reluctance to change, and the drastic changes that are needed for ‘the next generations to survive,’ that probably will not happen before the consequences intensify – which arguably happens when it is too late to change and stop the impacts.

### Hopelessness

12 candidates mentioned words like hopeless and pointless in their answers, but many more described these feelings more indirect as well. The candidates that mention a sense of hopelessness and no light at the end of the tunnel, and those who says it is too late to act now, have some different perspectives connected to these feelings. Some mention that because it is too late and it is hopeless no matter what we do, that we should just give up and continue in our business as usual-patterns. Others argue that it is hopeless for ‘me’ as an individual to act, but that the big corporations and political leaders need to take initiative. A few of the candidates

argue that Norway is more than good enough in their climate politics and action, and says that it is no use for us as a small country to sacrifice even more if the big polluter countries such as China, India and Russia do not follow in our footsteps.

“Many see that the earth is struggling because of things we could change, but the problem is that nobody knows where we should start or how to help make a difference. I get very sad by seeing and hearing about all the garbage and plastic in the ocean, about all the CO2 emissions, and about all the extreme weather events happening in other countries. Most people, including myself, only think about the country we live in, and we live in one of the best countries in the world. I do not often comprehend that garbage piles are expanding to be as large as cities, or that harsh weather is destroying people’s life and their homes, but when you first think about it, you feel very small. You feel like you can’t do anything about it, but this feeling could also be caused by other, older or more powerful people that make us feel this way.” (candidate 33)

This answer describes a sense of feeling small and powerless, which basically is the recipe for feeling hopeless. Another point of view that reflect these feelings can be found in this answer:

“My thoughts about climate change is that it is a huge problem for our society. I get very angry at the older generations that started using fossil fuels etc. I don’t think much will change before the fossil fuels (oil, gas, coal) are used up. Because everything people care about is to make money, and they don’t think about the consequences.” (candidate 30)

From this answer, we can see that there is a feeling of despair, and even anger, towards the previous generations causing the issue, but also towards the generations in charge today, that are not willing to change. Candidate 30 trace the issue to money, which is a very good observation – as we would not be in this situation if it were no money to be made from fossil fuels. It is what drove the older generations to exploit fossil fuels, and it is what drives our society today to continue doing the same, even though we are fully aware of the environmental cost. Some of the candidates that mention hopelessness also express that because of the hopeless

situation, they do not care about climate change, which is feelings we will explore further in the next subsection.

## 5.2 Climate change is not a problem

The second narrative of climate change is that it is not a problem. The ones who doubt the scientific evidence of manmade climate change has this narrative, as well those who do not care about climate change, and those who do not want to change their lifestyles often argue that climate change is not a problem. Many who think about climate change as a future problem also think of climate change as non-issue, because it is not their problem or responsibility, because it will not affect them. Most of the candidates seemed to believe in manmade climate change, but 6 candidates expressed their doubt in manmade climate change. Some of them argued that climate change was propaganda, a few said it was quite exaggerated, and some simply said they did not believe in climate change at all, and many said they just did not care even though they believed in manmade climate change. In total 11 teenagers expressed that they “did not care a lot about climate change at all.” A couple of the participants in the study mention that climate change is on the news too much, making the ‘constant talk about climate change’ feel like ‘nagging.’ One candidate even said she got worried for like 2 minutes after watching the news, but “2 minutes later, I forget all about it.”

### Do not want to change

First of all, those who straight up say they do not want to change, often view climate change as a nonissue. The ones who answered the study in this manner, fit within several categories, some of them were anxious, some of them talked about feeling hopeless, some of them argued that they did not care, and some said climate change will not impact their life, so they simply do not want to change. Like we have already seen, some argue that we should change in certain ways, but not others. Such as the candidate that wanted to continue to travel with airplanes, or the candidate that figured we should continue to eat meat etc., like earlier mentioned. The teens who fit within this frame, as well as the overarching ‘climate change is not a problem-frame’, could arguably confirm Stokesnes (2015) theory about psychological barriers to climate action.

### Do not care and doubtful



In total 11 candidates say very clearly that they do not care about climate change. However, if you analyse the answers more thoroughly, one can see that 32% of candidates express in one way or another that they do not care about climate change. What is interesting is that despite many not caring about climate change, most of them believed it to be manmade. Only 3 said that they do not care, and do not believe in it. What we can derive from this is that maybe the biggest issue is not so much about the scientific evidence and those who are doubtful to manmade climate change, but rather those who do not care about climate change, even though they are aware of the cause and possible impacts. The careless attitude could be traced to the super wicked nature of solving the issue, as it is very inconvenient to change our lifestyles and source of income (fossil fuel exploitation). It is hard to know where to start the change, and furthermore, it can seem impossible to fix a problem that is a global issue, when there is no one clear pathway to a solution. The sense of hopelessness that were earlier discussed could be traced to some of those who say they do not care about climate change. For example:

“The problem is that there are few ways to reverse and stop the damage that has been done. Tanker ships are responsible for a lot of pollution and GHG-emissions. But without tanker ships, what can humans do? Things can't be transported, neither things you buy from eBay, or oil etc., that is a necessity for us humans to live a comfortable life. There are probably small things we can do to hurt the environment less, but the effect of these actions is minimal, so from a narcissistic point of view, there is no reason to act or change our behaviour, because the damage will be done anyway.” (candidate 48)

The mind-set of candidate 48 can be found in many of the provided answers. It seems that many of the participants would prioritize their own comfort and to have a convenient way of life, over changing their habits and actions towards a sustainable future. It makes sense to claim you do not care about climate change (or don't believe in it), so you don't have to feel bad for the way you live.

Two candidates stand out in the way they express their feelings towards climate change. They are doubtful about the impact humans have had on climate change, but they believe climate change is happening for first and foremost natural reasons. Furthermore, it seems like they do not use the doubtful-perspective to try to feel better about their lifestyle, but that we actually

*should* act if humans perhaps are influencing the natural process a bit. Candidate 40 said that he does not believe in manmade climate change per say, but he believes that human pollution could contribute to enhance the natural greenhouse effect, he further state that he thinks we need to try to slow down climate change, if we want to ‘live on this earth in the time that is ahead of us.’ Like already implied, not many of the candidates share this view. In fact, only one other candidate (candidate 7) claim that she does not believe in manmade climate change, but believe there will be consequences in the future. Meaning that these two candidates represent those who believe in natural climate change, and are worried about the future because of it. Candidate 7 thinks climate change is exaggerated, however, candidate 7 also express that she agrees with efforts to better the environment, but that the school strike for the climate-initiative is ‘a bit too much.’ Furthermore, she writes: “I think it can impact many generations later. I think the air could become very polluted and it could become hard to live like we do now. But I do not think it will impact me and my life a lot. Except I think all the plastic will be replaced.”

The answer candidate 7 provide, give a somewhat divided picture of this narrative. Candidate 7 express a doubt in manmade climate change, but she talks about consequences in the future, such as pollution. What we can derive from this answer is that she perhaps believes in changes in the environment and the climate, but maybe she thinks they are first and foremost natural. In addition, even though she does not believe in manmade climate change, she is predicting that society does, and that society will respond to climate change by reducing the plastic waste and products, which will impact her life as well.

Quite a few of the candidates mention they prefer warmer weather, so climate change is not really too bad. This point of view is quite interesting, especially since 6 candidates mention this, making it reasonable to believe that it is quite a normal thought amongst teenagers in Norway. The key takeaway from this observation is probably the fact that the candidates are from Norway, and they are used to cold and bitter weather during large parts of the year. However, what is equally interesting is that they don’t seem to think about other repercussions climate change might expose them to. It is hard to point to lack of information about repercussions, because the media coverage of for example the wild fires, droughts and struggling farmers and crop-issues from the summer of 2018 were quite extensive. So, the issue might not be access to information, but rather which information people decide to pick up. For

example, there is endless of information about sports and results, both in media coverage, social media, and the internet in general, but if one is not interested in for example football, one would not bother to read about Manchester United's latest match. The same principle could be traced to climate change, as people who are not interested in this issue, most likely will not spend much time on news and information about climate change. This argument can be illustrated by looking at the answers from candidate 6, 13 and candidate 53:

**Questions:**

**1)What are your thoughts about climate change?**

**2) How do you think climate change can impact your life and your future?**

Candidate 6 (Male, 18)

- 1) It is bad but I don't care a lot about it.
- 2) It will be very warm in the future.

Candidate 13 (Male, 18)

- 1) Climate change is cool because:
- 2) Warmer sun

Candidate 53. (Male, 17)

- 1) I think we have reached a point where it is very hard to fix the problem. Even if we stop all climate pollution right now, there would still be CO<sub>2</sub> in the atmosphere and the ocean, and it will be there for a while. We can see the impacts everywhere. This year it has been wildfires in California that resulted in entire areas burning to the ground, including many homes, forcing people to move away from their hometown (...). In Antarctica chunks of Glaciers are increasingly being separated from the Glaciers (...). The sea level is rising due to the melting Poles, and the average temperature on earth is rising. The industrial revolution started an intense population growth, and the increase in the population means an increase in the use of resources. Fossil fuels are releasing climate gasses that are polluting and hurting the environment. We are trying to do a lot to stop the problem from increasing, by for example creating the Paris

Agreement, but when people in power refuse to believe in climate change, it can have huge consequences for the rest of us. (...) We are making electric vehicles, hydrogen cars, and we are trying to find ways to reduce pollution (...) However, when people realize a huge part of the climate pollution comes from the meat industry, not many are willing to change their eating habits. (...) I think it is too late to reverse the progression, and we should wait and see what happens. We made a mistake, and it is too late to stop now.

- 2) (...) The global average temperature is rising, which result in more extreme weather. The last couple of years there have been an increase in natural disasters in the US. Global warming is melting the Poles, the cold water is impacting the Gulf stream, dissolving it, which will make it very cold here in Norway. This could impact me directly. Cultivating food can become impossible in Norway, among other countries (...)

It is very clear that these three candidates, whom are all male and approximately the same age, have consumed quite different information, and have a different interest in climate change. Of course, answers like candidate 13 contributed with, could simply be a joke, and should perhaps not be taken too seriously. However, like seen earlier, 6 candidates mention that it is nice with warmer weather. For example, candidate 15 (female, 17) write:

“My thoughts about climate change is that I think some changes are happening. Both big and small, that I don’t always know about. I do care about the climate, and I do not want to destroy it by littering on purpose. At the same time, I do not think about it much, because I think ‘it will be fine.’ Climate change is something that always will happen, the only question is if the impacts are good or bad. Global warming is something I have noticed. I feel like everyone is talking about it. I want it to become warmer, because I think that is better than cold weather. But I do not always think about the big impacts of climate change. It is not like I walk around and think about it all the time.”

After looking at the candidates that frame climate change as not a problem, as well as those who actually narrate climate change as *positive*, one could perhaps hope it could be blamed on

lack of information, but the truth is that it is probably based on a lack of interest. Maybe these specific teenagers don't pay much attention the news, but would rather enjoy the nice weather and focus on their tan?

### 5.3 Climate change is a future problem

The third narrative of climate change is that it is a future problem. It is interesting to see how different the teenagers engaged in the study choose to describe their future outlook. Some of them mention 'the end of the world', 'doomsday' and other descriptions of this manner, when they are writing about how they think climate change could impact their future, and even more so the future of their children and grandchildren. Many of them are very worried and describe destruction and no hope in the future:

"If I wanted children, that would be worrying, as climate change could destroy the future" (Candidate 1)

"I think Climate change in the future will be extreme. The weather will change, it could get much colder or much warmer. This could lead to extinction of animals and nature. In the future, I could be impacted by bad air due to pollution, or a rise in the sea level could result in the area where I now live to flood."  
(Candidate 10)

One interesting aspect of this narrative is that the majority of the answers actually mention climate change impacts in the future, but not in their own lifetime. They are worried about the future generations, but point out that they are unsure if climate change will impact them directly. Many of the candidates describe the future of their children and grandchildren as very doomsday-like, but yet they don't think they will be impacted? At the same time, we know that in Norway, the life expectancy is 82,5 years old (World Bank, 2017), and on average parents are about 30 years old when they have their first child. (Eriksen, M, 2017), meaning that according to these statistics the candidates would live with their children, until the child is 52,5 years old. Some might even have children when they are younger than 30, and some might live even longer than to the age of 82,5. This could be a paradox, as they believe climate change will not impact their life, but most likely their children, and grandchildren (who, according to the statistics, would be 22,5 years old when the candidates die), meaning they either think climate change will only impact the last part of their children and grandchildren's life, or that

they are living in dissonance, denial, or another state of mind that helps them not worry about impacts in their lifetime.

To sum up, the ‘climate change is a future problem-narrative’ can be divided into those who are anxious about the future, and those who think we need to act now, as well as those who do not care and those who simply do not want to act. There have already been some examples and discussions of these narratives throughout this chapter, but it was necessary to add this narrative as an overarching category, as this narrative is the one that had the most ‘support’ in the study. This narrative will be given more attention in the next chapter, as there are some paradoxes and moral discussions in relation to this narrative that needs to be explored further.

#### 5.4 What does it feel like to grow up in anticipation of catastrophic climate change?

After having discussed the three overarching narratives the research question needs to be addressed. Obviously, there is no simple answer to the research question, as every single one from generation Z experience their individual life and future outlook in a unique way. However, like we have seen, we can find some themes that are of a somewhat similar nature. In the chapter about the contemporary context of this thesis, there is a few references to angry youth in the streets striking for the climate, and a question was raised – is this an accurate picture of the way Norwegian teens feel about climate change? Based on the answers derived from the candidates, the answer to the question could actually be both yes and no.

First of all, of all the 75 candidates, many did seem to be concerned about climate change, some were upset, some were sad, and some were angry about the slow development of a sustainable future, meaning they share some of the same feelings as those striking for the climate. So yes, the picture of the striking teens in the street are a somewhat accurate picture of how many of the teens in Norway feel. However, none of the candidates mentioned that they had been participating in the school-strike for the climate, even though they were encouraged to mention it if they had any thoughts about the striking, so arguably one could claim that the picture is not accurate, as they are not striking, but somewhat accurate because they share the feelings? When that is said, only 75 teens participated in the study, but hundreds of thousands of teenagers across Norway has been participating in the strike, so we know for a fact that *many* feel the way the striking teens does, regardless if no one from the sample of teens in the study participated in the striking. Furthermore, when analysing more in depth whether the candidates care or not about climate change, 67% actually state in one way or another that they care about climate

change, meaning that at least a good portion of Norwegian teens (if you generalize the findings in the study), potentially share (some of) the feelings of the striking teens. When that is said, there is no evidence found that they feel as strongly or that they are ‘as angry’ as the teens striking, even though they *care* about climate change.

On the other side of the feeling-spectre, we have seen claims from for example Stoknes (2015) that: *“the scientific data and measurements about climate change and global warming are getting stronger and stronger (...) Still, people in many countries seem to care less and less – particularly in wealthy petroleum-based economies such as the United States, Canada, Australia and Norway.”* (p.xviii) And the question was, is this statement true for the Norwegian teens participating in the study? First of all, ‘care less and less’ cannot be measured accurately, as we cannot know what numbers to compare the study’s findings to. However, we know that in the study about 50 of the participants said in one way or another that they cared about climate change. This means that 67% of the candidates care about climate change, which arguably could mean that Stoknes’ assessment might not fit within this data material, as a very large portion of the candidates expressed that they did care about climate change. When that is said, very many of them, including those who said they care, did not want to change, or found it hopeless to act etc., so many of these narratives fit within Stoknes’ theories about psychological barriers. Maybe we can say that a lot of people care, but a lot of them are reluctant to act for a variety of reasons, just like Stoknes argue. One point he made is that the information and the scientific data is getting stronger and stronger, which we can trace to the candidates answers as well, as only a few participants did not believe in manmade climate change.

To sum up, it seems that many express that they are concerned about climate change, but maybe first and foremost on a somewhat shallow ‘level,’ as many of them talk about worrying about climate change, but at the same time they talk about not wanting to, or being able to, change their lifestyles. The research question aims to gain an understanding of the feelings generation Z have towards climate change and what their future outlook is. What is clear after conducting the study is that the clearest feelings that most participants seemed to ‘agree on,’ are anxiety, worry, a feeling of distance (climate change is a future problem), and a sense of hopelessness. And in addition, a somewhat fewer number of candidates felt doubtful, indifferent and simply did not care.

## 6. Discussion

After looking at the different narratives and feelings the participants had towards living in anticipation of climate change, it is time to reflect on a deeper level on the notion of living in anticipation of climate change, as well as discuss the lack of urgency we can trace to many of the participant's answers. Some attention will also be given to how narratives and attitudes towards growing up in anticipation of climate change affects the motivation to act, and a discussion of which of these attitudes are the most harmful. This chapter will also look at how the core issues of climate change can be connected to the narratives.

### 6.1 Living in anticipation

The main theme of this thesis is living in anticipation of climate change. This thesis standpoint is that everyone in generation Z is 'growing up in anticipation of climate change', however, everyone might not agree on this notion. First of all, to anticipate something means to expect or predict that something is going to happen. The question is then, do the ones who claim they do not believe in climate change, or those who do not believe they will be impacted by it, *really* live in anticipation of climate change? This thesis will argue that yes, they are, but they are anticipating that they will not be impacted, they are expecting that they will be fine. If you think about it, if you predict it will be rain tomorrow (perhaps based on a weather report), and your friend expects it to not rain, you are both anticipating a certain outcome.

To live in anticipation of something as complex as climate change, that is not only coined as a wicked problem, but a *super* wicked problem, obviously impact people in different ways. What is interesting is that one would think that most people would anticipate somewhat the same outcome, as you normally do when people have seen the same weather report, but in regard to climate change, quite a few of the participants seemed to predict 'nice weather' instead of the 'natural disasters' that the climate change scientists are predicting. However, due to climate change being a complex issue, with much research, you could compare this to many different weather reports, with different focus, predictions and time frames. And like discussed earlier, even though there is a ton of information about climate change, predictions and impacts, not everyone is interested in the issue, and therefore do not absorb the same information.

It seems that many of the participants perhaps are showing some symptoms of the psychological barriers to climate action that Stoknes (2015) discuss. Many are talking about a distance to climate change, both in time and geographical location, resulting in them not anticipating being



impacted by climate change, which could hinder their motivation to act climate friendly. On another side, if you are anticipating that certain outcomes will happen no matter what we do, like those who have a dooms-day narrative, or a hopeless-narrative, you will most likely be reluctant to act climate friendly. If you have these narratives, the ‘anticipation of climate change’ might not actually impact your life much at all. It seems that mainly those who are anticipating impacts in their lifetime, or those who are worried about the future generations, that at the same time believe we *can* or *should* try to lessen the impacts, are those who are the most affected by living in anticipation of climate change, as these are the ones who feel compelled to act climate friendly. Both if they change their lifestyles or if they just feel bad about not changing their lifestyles, the anticipation will impact them, either physically or mentally.

One could perhaps argue that the way you are anticipating something, could reflect the way you view the world in general. If you think about climate change as not really a problem, or at least not in your lifetime, you might be an optimist. Of course, it could mean that you do not care and just want to continue your life as usual as well, which might not classify you as an optimist but rather careless? Anyway, if you are anxious and worried about climate change, you could perhaps be a pessimist? Even though that is a bit unfair to call the people with this sentiment pessimists when they arguably could be classified as realists? Most of them base their anxiety and worry on scientific evidence, but at the same time, they seem to not have much faith in different responses, such as mitigation, adaptation and transformation.

Arguably, growing up in anticipation of climate change might not impact the teenagers lives as much as one might have thought originally. Anticipation is a feeling that you do not have 24 hours a day, 7 days a week. It is often something that comes and goes, and it is usually a more present feeling right before something is about to happen. Like we have seen, many of the participants do not believe something will happen in quite a while. Even amongst the teens that coined their feelings towards climate change as anxious and worried, many of them stated that they did not expect to see or feel any impacts any time soon, if they would experience anything in their lifetime at all. However, the teens that are concerned about climate change could like we have seen, experience climate change anxiety, but maybe even more of them are experiencing first and foremost a kind of ‘slow stress’ connected to climate change. This feeling could be compared to having a deadline hanging over your head, but it is quite far in to the

future the deadline is set. This means that some days you do not even think about the deadline, you got other things on your mind, perhaps a more current deadline or another issue that takes precedence. However, the deadline is creeping closer, and the stress might increase simultaneously. Living with this kind of slow stress connected to climate change, could perhaps not make people change their lifestyles drastically, but it could still impact them because they might feel guilty for not doing enough, and constantly feeling like they should do more. In fact, many of the participants described feeling bad, and many said they *know* they should do more, but for many different reasons they did not act climate friendly. These participants are probably the ones who are experiencing the feeling of ‘slow stress’ the most. We know that 67 % of the participants expressed in one way or another that they were concerned about climate change, but we also know that not too many of them talked about a need for change. Some even said they did not *want to change*. Some said we should still eat meat and travel with airplanes, even though they thought we should act climate friendly on other aspects in our lives – just not the aspect they prefer. What we can derive from these sentiments is that many seem to view climate change as a problem that is not really that urgent to deal with.

## 6.2 A lack of urgency

One of the most important findings in this paper, is that a fair amount of the participants frames climate change as ‘not urgent’, and view it is a first and foremost a future problem. Many expressed that they did not think they would experience any climate change consequences in their lifetime. However, as we have seen, scientists believe that the climate change consequences will increase in occurrences as well as magnitude, if the temperature increase continue down the same path as we are now on, and they are talking about consequences in a rather near future, compared to the distant future the participants are describing. The question is, how does the perceived slowness and lack of urgency affect attitudes and concern about climate change?

First of all, because climate change is a never-ending issue, with no clear solution, and with the worst impacts in the future, it gets pushed off the issue attention cycle and the political agenda fairly often. If anything seems more urgent, it will take precedence over a creeping catastrophe. Second, the perceived slowness and lack of urgency make people less worried, because they think of climate change as a distant problem that will not impact their life anytime soon. In fact, if you hear the same disastrous news or warnings over and over again, you become immune to the message in the end. Everyone knows that every day, people are dying of hunger, war,

murder or in traffic accidents, yet, you do not see people getting upset over it. It needs to hit closer to home before you see real reactions. There needs to be a sense of “that could have been me, or someone I love” before you see people react. For example, almost all Norwegians probably thought ‘terrorism is not a Norwegian issue, it could never happen here’, before 22<sup>nd</sup> of July in 2011. It seems that some of this frame of thought can be traced to some of the participants, when it comes to climate change. They argue that ‘climate change is bad, but it will not impact my life, because I live in Norway...’ Maybe there needs to be harsher consequences before people view it as an urgent problem, that is not as distant as they thought. The problem is like mentioned, that it is hard to state with absolute certainty that one event is directly caused by climate change or not, so there will always be those who argue that it is not, and that the problem is non-existent. Furthermore, these narratives, of a lack of urgency, as well as viewing climate change as a non-issue, result in what we can call ‘a lack of drama’ connected to climate change. This might be a bit surprising, as we have seen that the media often frame climate change very dooms-day like, and there is plenty of dramatic frames to be found in the news-coverage of the issue. However, we know that Stoknes (2015) argue that being exposed to too many dooms-day narratives in the media, will eventually not impact you anymore, because you basically become immune to the message. In addition, when a problem is framed as impossible to solve, but likely to happen, you will eventually not want to think or talk about it anymore, because it is uncomfortable. Like we have seen, a big portion of the public have an attitude that reflect that ‘we will be fine, for now.’ The lack of drama connected to climate change can be traced to that while natural hazards like floods produce shocking material damage and sometimes acute suffering, the impacts of climate change are more subtle. In fact, often the impacts of climate change have to be proven to exist, by for example monitoring a slow change in ecological systems. Of course, this slow and almost unnoticeable change do not cause as much drama as a devastating flood. This could be compared to the common saying that if you want to boil a frog (alive), you cannot throw it into boiling water, as it would jump out, but if you put it in the pot when the water is cold, and slowly increase the temperature, the frog would stay in the pot. In a way, climate change is our cold pot (earth) starting to boil (temperature increase), but it is happening so slowly and unnoticeable, that we are just chilling in the pot, enjoying the slightly warmer water. Maybe we will experience more drama or urgency connected to climate change, when we can feel the water getting too hot, and the impacts are increasing.

### 6.3 Harmful narratives

Like we have seen, the fact that many view climate change as a future problem, and the lack of urgency we can trace in many of the answers, could potentially be classified as very harmful narratives, when it comes to motivation to act and change. We can see other narratives as harmful to the motivation to act as well, such as the ‘not in my backyard-narrative’, that has been present in a lot of debates about wind-turbine instalments. This perspective is often based on that ‘climate change action is a good thing, as long as it will not impact me - do not put a wind turbine in my backyard.’ We can see this type of mentality in some of the answers from the study as well – you have some who argue that we should still eat meat but travel less, you have some that argue we should still travel but maybe change another aspect of our lives and so on. Many of the participants do not want to change their lifestyles, for a variety of reasons. Some talked about it being *pointless* to change, because others are worse and it does not matter what ‘I’ as an individual or ‘we’ as a small country do, because major polluter-countries like China, India and Russia are polluting in such a grand scale that our changes will not matter regardless of what we do or do not do. This narrative is very harmful when it comes to motivation to change, because it has a negative cycle of impact – which makes it very hard to break if everyone just blames each other, and nobody wants to start the change and break the cycle. Another narrative that is harmful to action, is the narratives of the ones who say they *know we should* change, but they are not able to – either because the climate friendly options are not good enough (such as public transport), or because they are struggling with letting go of certain comforts in their lives, such as eating meat, ordering cheap stuff from China and travel etc. Furthermore, the fact that we ‘soothe ourselves’ with comforting narratives, that distract us from climate change, could also be harmful to climate action. If we constantly think that ‘we will be fine’ and ‘it is okay,’ we will not feel compelled to act climate friendly. This could have ties to the fact that we constantly are exposed to ‘catastrophic climate change-narratives’ in the media and in research, but it is not experienced in real life. Because we cannot see any direct impacts of climate change (arguably, of course) in Norway, and people experience that their lives are fine and not impacted by climate change, it could eventually become difficult to view the catastrophic reports and research to be real.

These harmful narratives, regardless of what the reason for they are, could be one of the biggest issue society face when it comes to climate change. The unwillingness to change is the main obstacle to break the previously mentioned negative ‘cycle of impact.’ Because we do not want to change our lifestyles, we do not vote for political leaders who have drastic green politics on their agenda, resulting in new oil fields being opened etc. (Barstad, 2018). Furthermore, when politicians dare to suggest implementing politics that could potentially be climate friendly (like toll-roads), they risk having their children be threatened and beat up (Andresen, 2019). No wonder the cycle of impact is hard to break, when the unwillingness to change is so strong amongst many.

As many candidates have argued, the impacts probably need to be felt in a much greater scale before the ‘talking’ turns to ‘walking,’ or before words turn to action. When that is said, it is not necessarily a given that we will change once the impacts are upon us. People are still smoking cigarettes, drinking alcohol and eating junk food despite it having a direct huge impact on their health and life expectancy, so if people are not willing to change their way of life to save *their own* life, how can we expect *narcissistic* creatures like humans to change their way of life to save someone else’s, based on the ‘probability’ climate change research build on? Of course, many do quit smoking if they get COPD or cancer, but often it is way too late. Maybe that is what will happen in regard to climate change as well? We might stop polluting when we see greater impacts, but it could be too late.

#### 6.4 Core issues connected to the narratives

We can draw some lines between some of the core issues with climate change to the individual experiences of living in anticipation of climate change. Climate change is a problem that have no clear solutions or end, there are no central authority to force anyone’s hand to act climate friendly, we are approaching many planetary thresholds and it is a complex ethical dilemma everyone thinks something different about. Many of the candidates have talked about the short time horizon we have to fix things, they are describing feelings of anxiety and worry because it is *soon* too late. These feelings are linked to thresholds, many candidates are worried about animals going extinct, nature ‘dying’ and sea levels rising. Some candidates are talking about it being hopeless because nobody knows where to start, because there is no central authority. In addition, many arguments have been made towards not wanting to change because other, worse countries are polluting anyway, and the damage is being done regardless.

Another core issue connected to both climate change and the narratives, is like already discussed – the lack of drama. It is very paradoxical that when people are exposed to constant dramatic frames of climate change, like we often see in the media, they respond the exact opposite way than what would perhaps be logical. Instead of being scared, afraid and compelled to act climate friendly and change their lifestyles, people tend to take the catastrophic-frames less seriously, they tend to downplay the feeling of worry and fear. Like we have seen, this is actually a coping-mechanism of sorts. It is connected to psychology, and not a topic this thesis is able to discuss in depth. However, Stoknes (2015) argue that the best way to deal with these psychological barriers is to (among other things) “avoid triggering the emotional need for denial through fear, guilt and self-protection” (p. 90). Of course, these suggested steps towards change, are not exactly what we see politicians and others trying to make a change, take. More often than not, we are exposed to climate change-messages, that play on our guilt, self-protections and fear. Playing on fear, guilt and self-protection could be classified as rhetorical devices. However, we know that politicians are not allowed to use feelings such as fear to gain votes, without it being called propaganda, which is exactly what some of the candidates argued that the climate change-messages was. Anyway, the point was to illustrate that we are in the midst of a bad cycle of impact, as the dramatic climate message of catastrophe and a need for change result in denial, dissonance and other psychological barriers to climate action.

Climate change is a complex ethical dilemma. It is based on priorities, world views, and narratives. People tend to always put people on the top of the food chain, and on top of any other living being on earth. This thesis will not start a philosophical discussion about the value of a human life versus animal life, but it could be interesting to address how climate change force us to think about what human lives we want to prioritize. First of all, it is the wealthy industrialized countries that have made their fortune on exploiting fossil fuels, but it is the poor developing countries that are facing the harshest consequences. It is the developing countries that are the least resistant to climate change, as they are very dependent on their natural resources and very vulnerable to natural disasters and climate change in general. In addition, they often live in geographical areas that are more exposed to natural disasters, droughts, flooding and so on. As if this was not bad enough, the developed countries are now trying to force these countries to slow down their development, because it is hurting the environment. As if this current ethical dilemma, of rich versus poor, was not enough, climate change evokes a new debate about the future generations needs versus our needs in the present. How can we

decide which lives are worth more? Climate change is indeed a super wicked problem, the complexity, the ethical dilemmas, and the fact that there is no clear answer or solution at hand, makes it very hard to address, which is maybe why so many of the participants seemed to be concerned about climate change, but many did not seem eager to change. It seems impossible to make a significant change. One candidate said, *it is all about the money*, and that is maybe the best summary of the ethical dilemmas and the issues at hand. It can be hard to discuss adaptation, mitigation and transformation, when people are so focused on making money of fossil fuel exploitation. Because it is hard to add the value of clean air, a healthy earth and ecological diversity into a cost/benefit analysis, when most of us only see the value of living a comfortable life, at the same time as we are enjoying benefits such as clean air and ecological diversity. It is a common saying that you do not know what you had, until you lost it. Maybe we do not know what these things are worth, until it is too late.

## 7. Conclusion

The aim of this thesis has been to research how young people conceptualize life and their future in anticipation of climate change, by trying to answer the research question: *What does it feel like to grow up in anticipation of climate change?* The teens that participated in the study had quite different feelings and narratives, that yet were interlinked in a number of ways. The feelings towards climate change that most of the teens seemed to share, were feelings of anxiety, worry, a feeling of distance to the issue, and a sense of hopelessness. A somewhat fewer numbers of candidates felt indifferent, doubtful or did not care about climate change. The teens conceptualized climate change as ‘a current and urgent problem,’ ‘a future problem’, and ‘not a problem.’ However, these frames were somewhat interlinked, as they did not necessarily share the same feelings even though their answers were coded in the same frame. For example, many framed climate change as a future problem, but some felt that that meant they did not have to worry about it, some felt worried for their future children, others expressed a need to act *now*. In addition, it seems that many express that they are concerned about climate change, but maybe first and foremost on a somewhat shallow ‘level,’ as many of them talk about worrying about climate change, but at the same time they talk about not wanting to, or being able to, change their lifestyles.

Growing up in anticipation of climate change might not impact the teenagers lives as much as one might have thought originally, as it seems that many view climate change as a problem that is not really too urgent to deal with. The lack of urgency could be traced to many of the answers,

even in the answers of those who expressed concern about climate change. Many of them were concerned, but at the same time found it rather hopeless and pointless to change their lifestyles. Many of these narratives could be classified as harmful, when it comes to the motivation of acting climate friendly. Furthermore, it is clear that many of the narratives are connected to many of the core issues with climate change. Climate change is a problem that have no clear solutions or end, there are no central authority to force anyone's hand to act climate friendly, we are approaching many planetary thresholds and it is a complex ethical dilemma everyone thinks something different about. The candidates in the study are concerned about the short time horizon we have to fix things, they are talking about a sense of hopelessness because they cannot see how climate change can be fixed, or even slowed down magnificently. The teens see that there is a lack of solutions, and there is a lack of cooperation among the nations of the world, they see many countries not caring about their GHG emissions, and they feel it is pointless for them, or for us as a country, to change if not everyone is on board on the emission-free train.

Earlier, some of the weaknesses of the study were addressed. The most obvious weakness is that there could have been a bigger number of participants in the study, from a more diverse group of people, not necessarily from the same area in Norway, and maybe also across more ages than were included in this study. This could have improved the representativeness of the study, as well as the generalizability. Another weakness is the lack of opportunity to ask follow-up questions to the participants, however, this would also have limited the number of participants that could attend the study, as interviews are much more time consuming.

It could be interesting to repeat this research in other areas of Norway, Europe or even the world, to compare the answers. Furthermore, repeating this study in a few years' time to compare the answers could potentially be very interesting. Has anything changed? Can you still see some of the same themes? Are some narratives stronger or weaker than before? Are there new narratives or themes to be seen? On another note, it could also be productive to use this research as a stepping stone to research how to best respond to future generations anxiety and issues related to climate change, as we have seen in this study, there are already a great number of teens who are worried and anxious about their future, and it will probably not get better if we continue down the same fossil fuel-pathway as we are currently doing. It could also be interesting to research *how* we can change certain attitudes towards climate change, especially



in the sense of how to make people change their lifestyles to be more climate friendly. We need this type of research because as we have seen in this thesis, many claim to care about climate change, and talk big words of a need for change, as they continue to eat their beef whilst on a plane on their way to the other side of the world.

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