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**“It always feels like it will never really change at all”: An Interview Study on Climate  
Fiction Reading and Emotions**

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**Abstract**

Climate change is a significant environmental, societal, psychological, and economic threat. People are known to have difficulties in coping with this challenge and show confusion about their actions and feelings in relation to climate change. In recent years, the literary world also seems to be taking up the topic and climate fiction shows a growing body of novel work. Owing to the growing interest in climate fiction and the readership, some gaps in research are becoming apparent. Despite the potential emotional impact that cli-fi reading can have on the reader, there is hardly anything known about how the readers of cli-fi actually perceive the impact of these books on their emotions. The present thesis has investigated, through thematic analysis of interview data, the emotions experienced by cli-fi readers. The results could be summarised into five common themes, namely Hopelessness, Motivation, Sadness, Anger, and Shock. Conclusively, this study shows that reading climate fiction can evoke emotional responses in readers, which are negative as well as positive. These findings provide a basis for interventions to help people cope with their emotions or to promote positive actions towards climate change.

*Keywords:* climate change, climate fiction, emotions, narratives.

**“It always feels like it will never really change at all”: An Interview Study on Climate Fiction Reading and Emotions**

Climate change is an environmental, societal, psychological, and economic challenge. People show confusion about how to handle it emotionally as well as practically (Harris et al., 2021; O’Neill & Hulme, 2009). In recent years, it has become apparent that literature in the genre of climate fiction (also known under the term “cli-fi”) has been increasingly the object of both scholarly and media attention (Johns-Putra, 2019; Pak, 2021; Schneider-Mayerson et al., 2020; Trexler, 2015). For the purpose of the present thesis, climate fiction is defined as literature (or other media formats) dealing with climate change; further classified as science fiction, dystopian novels, thrillers, fantasy, or romance (Frelik, 2017; Goodbody & Johns-Putra, 2019; Johns-Putra, 2016; Mehnert, 2016; Schneider-Mayerson, 2018). Moreover, the genre comprises novels such as “The Sea and the Summer” by George Turner (published in 1987), which is sometimes mentioned to be one of the earliest climate fiction novels (Johns-Putra, 2020), or “Heat” by Arthur Herzog (published in 1977). Also, authors such as Margaret Atwood, Emmi Itäranta, John Lanchester, Kim Stanley Robinson, and many more have contributed to the genre of climate fiction (Berry, 2015; Johns-Putra, 2020). Climate change and the way it is addressed in climate fiction represents an emotional topic given its devastating effects on the environment and our futures (Bloodhart et al., 2019).

A number of climate change factors can have an impact on people's emotions, for instance, the negative effects on animals and natural habitats can trigger feelings of loss, sadness, and even fear (Bloodhart et al., 2019). The most common emotional response associated with climate change is climate anxiety, which is becoming an increasingly discussed topic in scientific literature (e.g., Clayton, 2020; Clayton & Karazsia, 2020; Pihkala, 2020). In this context, climate anxiety constitutes a negative emotion not only associated with fear, but also with hopelessness, anger, and grief (Clayton, 2020). Furthermore, it is frequently mentioned that younger generations are more likely to be affected by climate anxiety (Dodds, 2021; Kelly,

2017; Schneider-Mayerson & Leong, 2020). This also applies to indigenous groups and people who feel closely connected to nature (Clayton, 2020; Clayton & Karazsia, 2020). Although climate change has a direct link to the mental health of the population and is a psychological problem, in literature before it is mentioned that it should neither be individualised nor treated pathologically nor medically (Dodds, 2021; Clayton & Karazsia, 2020). According to Lawton (2019), “what we are witnessing isn't a tsunami of mental illness, but a long-overdue outbreak of sanity”. In other words, climate anxiety is an appropriate emotional reaction taking the circumstances into account.

Nonetheless, getting engaged with the topic of climate change does not only elicit emotions in an exclusively negative way. According to Schneider-Myerson's (2018), approximately 26% of respondents expressed positive emotions, such as “inspiration” or “motivation” after reading novels that address climate change in a fictional way. Still, in Schneider-Mayerson (2018) research, the focus is strongly placed on the negative feelings of the cli-fi reader. Emotions such as helplessness, sadness, fear, and depression, as well as anger and nervousness are highlighted. Despite the fact that positive and negative emotions can be felt simultaneously when reading climate fiction, the focus on negative emotions can cause positive aspects of reading climate fiction to be neglected (Schneider-Mayerson, 2018). Lundholm (2019) also points out that accumulated knowledge about climate change acquired through reading a variety of literature or generally absorbing different types of information can evoke emotions such as hope. Furthermore, it can contribute to an increased interest in environmental issues and motivate the reader into making positive environmental changes (Lundholm, 2019). Similarly, Leavenworth and Manni (2019) commented explicitly on emotions in relation to reading climate fiction, emphasising that contemporary climate fiction with a speculative element can certainly provoke unsettling emotions. On the other hand, speculative or dystopian works can provide a safe space in which readers can explore their new thoughts. Considered as forms of new knowledge, fictional narratives can inspire meaningful thoughts and actions (Leavenworth & Manni, 2021).

In line with the findings of Leavenworth and Manni (2021), other sources point out that fictional narratives allow the reader to enter new realities and contexts, as well as to test their own emotional reactions and actions in different situations that would otherwise not be possible (Mar & Oatley, 2008). In light of the information, reading climate fiction can affect the readers emotions. Consequently, literary narratives or more precisely climate fiction narratives (Weik von Mossner, 2016) and their influence on the reader's feelings, ought not to be neglected since they hold the potential to influence the readers behaviour and future actions.

The emotional impact of reading has been approached using the notions of identification and transportation. According to Cohen et al. (2015), identification refers to the general connection the reader feels toward the narrative, such as how much the reader identifies with the setting and figures. A crucial role plays the understanding of characters, similarities between reader and character, and their shared emotional experiences (Cohen, 2001; Cohen et al., 2015; Hinyard & Kreuter, 2007). Feelings of identification can shorten the distance between the audience and narrative characters, causing an increase in emotional responses. In addition, the persuasiveness of narratives is also influenced by heightened transportation, characterised as a state of focusing on events and content in the narrative. Narrative transportation has significant effects on emotions and moderate effects on beliefs, attitudes, and behavioural intentions (Cohen et al., 2015; Hinyard & Kreuter, 2007). For instance, the use of animal stories, especially by animal and environmental organisations, is known to motivate the public to act more animal friendly (Malecki et al., 2019). These organisations use stories depicting abused and exploited animals to trigger an emotional reaction in the reader and to possibly stimulate action in favour of nature's well-being. It is assumed that empathetic feelings towards the animal in stories, can arouse the reader's interest in animals in the real world (Malecki et al., 2019; Weik von Mossner, 2017). Accordingly, Malecki et al. (2019) conducted an experimental study to control whether narrative empathy can improve attitudes in general towards animals and their welfare. The results of the study implied that narrative empathy for animal characters

in stories led to more animal friendly attitudes in the real world. This confirms that stories about animals arouse the feelings of the reader, giving evidence for narratives causing feelings of empathy. Considering the different results in narrative research (e.g., Appel & Mara, 2013; Malecki, 2019; Schneider-Mayerson, 2018, 2020), it turns out that emotional responses can get triggered by different narratives.

Nevertheless, the emotional consequences of reading climate fiction received only limited scrutiny and mostly in experimental and empirical design (see Schneider-Mayerson, 2018, 2020). As a result, knowledge about how readers of the genre of climate fiction experience their emotions after and during reading is missing, as no interview studies have been conducted to reveal how the readers' make sense of climate fiction. Given the lack of research, the present thesis will address the question: *“How do climate fiction readers discuss their emotions related to reading climate fiction?”*

## **Methods**

### **Design**

Within the framework of an extensive student project, supervised by assistant professor Dr. Heidi Toivonen; students of the department Psychology, Health, and Technology from the University of Twente investigated different thematic areas related to the experiences and perceptions of reading climate fiction. The present bachelor's thesis is explicitly concerned with emotional experiences while reading climate fiction. Prior to the data collection phase, the study was presented to the BMS Ethical Committee of the University of Twente (UoT) and was granted approval on the 11<sup>th</sup> of February 2022 (application number 220077). The data is stored safely according to the data policy of the University of Twente for the next ten years before deletion.

As a preliminary to the data collection phase, an interview protocol was created in collaboration with the supervisor and the students (see Appendix A). The interview protocol was tested in three test interviews. Several students at different levels of their studies

contributed to collecting the interviews in order to create a shared set of interview transcripts to be used by all students according to their needs for assignments or theses. This gave everyone the opportunity to have enough data to work with and made the data collection richer.

### **Participants**

The recruitment of participants who volunteered to take part in the study was done through two different methods: (1) over the online application SONA (a test subject system for students of the UoT) and (2) in collaboration by several students and the supervisor using their personal and professional networks, and various social media channels (such as Facebook, Twitter, or LinkedIn). Following three pilot interviews carried out by Dr. Heidi Toivonen to validate the utility of the interview protocol, the protocol was available to be used by the students. As a result, a total of 36 interviews were conducted, from which transcripts are accessible in the data base presented verbatim in English. Due to the scope of my bachelor thesis, I have limited myself to 8 interviews that I selected based on the following reasons: (1) the interviewees spoke clearly about their emotions after reading climate fiction and (2) the interviewees were able to give precise answers to the questions and were not vague in their descriptions.

The interviews that met the aforementioned criteria consisted of eight respondents who had previously read climate fiction. Of these, four participants identified themselves as female and four as male. None of the participants identified themselves as non-binary/diverse. The age of the interviewees ranged from 20 to 52 years. The participants included were either students or had a vocation. The demographic data of the participants can be found in Table 1.

**Table 1**

*Demographical Data of the Respondents*

<b>Name (Pseudonym)</b>	<b>Age</b>	<b>Gender</b>	<b>Nationality</b>	<b>Occupation</b>
Alex	22	Male	Lithuanian	Student
Ben	29	Male	Swedish	Employed

Isabella	23	Female	German	Student
Jessica	31	Female	German	Employed
Kiara	52	Female	Swedish	Employed
Lara	25	Female	Romanian	Student
Luis	20	Male	Austrian	Student
Roger	48	Male	Italian	Employed

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### **Materials**

In the orderly conduct of the semi-structured interviews, all students adhered to a previously compiled interview protocol. This interview protocol was prepared in collaboration with the students and Dr. Heidi Toivonen. The interview protocol can be broken down into three parts: (1) demographic questions providing background information about the participant, (2) two general questions about climate change, and (3) several questions about reading climate fiction and the participant's experiences in relation to it. Furthermore, an information sheet served as a resource for participants to obtain information about the study process. A consent form had to be read and signed by each participant before the interview began. To conduct the interviews, each student used Microsoft Teams (Version 1.5.00.15861) and its transcription software. The students who opted for a face-to-face interview recorded the interviews and later transcribed them verbatim to English.

### **Procedure**

The interviews were conducted either in person or (mostly) over Microsoft Teams (Version 1.5.00.15861). The primary language for the interviews was English. However, it was possible to have the interview in another language (upon request and if the interviewer was fluent in this language) if preferred by the participant. Each interviewee was required to have read at least one book or short story that they themselves defined as being climate fiction and be at least 18 years old. Apart from that, there were no other exclusion criteria. Necessary



information about the study, the confidentiality of collected data, and the purpose of the study could be obtained from the SONA system or the participants received an information sheet (Appendix B) via email.

At the beginning of the interview, the participants were asked to give their consent (Appendix C) for recording, transcribing, and using the interview data in the course of the research. After that, the participants were asked demographic questions including age, ethnicity, current employment status, and gender. The protocol contained questions such as: “How would you describe your views on climate change?”, “How realistic do you think are the scenarios depicted in the cli-fi books that you have read?”, “Has reading climate fiction influenced your feelings with regard to climate change?”, or “Has reading climate fiction influenced your perception of the future?”. The interview was designed in a semi-structured way, allowing the interviewer to ask initiative questions and leave enough room for the interviewees to openly express themselves.

The collected data from the interview, including the interview transcript, consent form, and video record were uploaded to a shared Microsoft Teams environment between supervisors and students of the study. The database was kept on password protected computers and only the students and the supervisor had access to the data. Before uploading the data, the interview transcript was anonymised, and the participant was given a pseudonym to further work with. All transcripts were transcribed verbatim to English.

### **Data Analysis**

The interview transcripts were analysed using a qualitative analytical method within psychology: thematic analysis (see Braun & Clarke, 2006). With thematic analysis, it is possible to identify, analyse, and report patterns (themes) within the interview data (Braun & Clarke, 2006). Moreover, thematic analysis offers a clear and structured manner to analyse qualitative data and go beyond the content level and to the meanings people build for certain topics (e.g., Braun & Clarke, 2012; Terry et al., 2017).

Following the six-step analytical process suggested by Braun and Clarke (2006), I conducted the data analysis. During the first step, I scanned all 36 available transcripts in order to filter which transcripts were useful for my analysis and specifically for my thesis. The filtering of the transcripts was mostly done with a strong focus on the questions about emotional reactions (see questions 1, 7, 12, 13, 15, and 17 in Appendix A). After selecting the interviews, I read through them more closely and also included questions that were answered by the participant in a way that also inferred emotional reactions. As a next step, I began to systematically code features of interest in the dataset. For each code, I collected and collate relevant data. In doing so, sections that I considered relevant were compiled into one code. No specific program was used for the analysis, but I worked directly with the transcripts and the classic paper pencil method. Next, the codes were composed in such a way that potential themes could be derived. Furthermore, I summarised all relevant data for each potential theme and created a table in which the codes and the themes were listed in relation to each other. In the next steps, I looked at the table I had created with the codes, the associated themes, and the relevant data, and checked again whether the themes made sense in relation to the coded extracts and the entire dataset. The themes as well as the codes were revised again, and I created distinct names for each theme. As a final step, I was able to use the complete table and data extracts for further analysis and report.

To give an example of the coding process, I will use the interview with Alex. During the interview, Alex answered one of the questions with the following sentences: *“Probably, yeah. Like, what I could do also maybe, travelling less with the plane might help, but yeah, in general I think, I would much more maybe want to do something in terms of activism for like bigger companies to stop doing what they're doing, you know?”*. From this sentence, I can derive the codes *“inspiration to act”* and *“climate change activism”* based on the following sections *“(…) traveling less with the plane (…)”* and *“(…) do something in terms of activism (…)”*. These two codes then belong to the theme *“motivation”*.

## Results

Overall, eight interviews were used for the in-depth analysis of the data. From these data, a total of 23 codes resulted which were subsequently assigned to the five themes. In Table 2, the themes and their definitions, the codes, and their frequencies can be found ( $N$  and  $N_2$ ). Respectively, the overall frequency of the theme was recorded as  $N$  and the frequency of how often the theme was mentioned within the interviews as  $N_2$ . The most common theme was Hopelessness ( $N = 28$ ), followed by Motivation ( $N = 24$ ), Sadness ( $N = 17$ ), Anger ( $N = 16$ ), and Shock ( $N = 15$ ). In the following, the themes are discussed, beginning with the most frequent one. Initially, I will describe the theme and then give one or two examples of phrases that occurred during the interviews. From there, I will elaborate on the meaning making as reported by the participants after their reading experience with climate fiction. The names used for the respondents are pseudonyms to preserve their anonymity. Each footnote listed along with the pseudonym provides reference to the book the respondent read.

**Table 2**

*Themes of Emotions after Reading Climate Fiction*

<b>Main Theme</b>	<b>Emotions of...</b>	<b>Primary Codes Included</b>	<b><math>N</math></b>	<b><math>N_2</math></b>
1. Hopelessness	...hopelessness after reading climate fiction described as a feeling that one will not experience positive emotions or improvements regarding climate change	- Feelings of powerlessness - Fear of future - Feelings of frustration - Feelings of depression - Feeling paralysed - Losing control	6	28

2. Motivation	<p>...motivation after reading climate fiction as the willingness to exert physical or mental effort in acting towards a better climate future</p>	<ul style="list-style-type: none"> <li>- Knowledge about climate change</li> <li>- Feeling motivated to waste less</li> <li>- Inspiration to act</li> <li>- Climate change activism</li> </ul>	6	24
3. Sadness	<p>...sadness after reading climate fiction as the emotional state of unhappiness about the climate situation, ranging from mild to extreme intensity</p>	<ul style="list-style-type: none"> <li>- Feelings of sadness</li> <li>- Feelings of stress</li> <li>- Feelings of helplessness</li> <li>- Feelings of hopelessness</li> </ul>	2	17
4. Anger	<p>...anger after reading climate fiction as the tension comparable to feelings of frustration and perceived injustice in terms of climate change</p>	<ul style="list-style-type: none"> <li>- Feelings of people being careless</li> <li>- Anger towards humanity</li> <li>- Anger over unchanged behaviour</li> <li>- Feelings of sadness</li> </ul>	3	16
5. Shock	<p>...shock after reading climate fiction as a surge of strong emotions and a corresponding physical</p>	<ul style="list-style-type: none"> <li>- Fear of future</li> <li>- Feelings of anxiousness</li> </ul>	3	15

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reaction (such as	- Shock about lack of
paralysis or panic) when	action
thinking about	- Lack of seriousness
humanities lack of	- Feelings of Panic
seriousness regarding	
climate change	

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*Note.*  $N$  = Appearance of theme within all eight interviews used.  $N_2$  = Overall frequency of theme in all eight used interviews.

### **Hopelessness**

In the course of the data analysis, it became apparent that the theme *Hopelessness* was most frequently discussed by the respondents. In accordance with the feelings described by the respondents, the theme Hopelessness can be defined as “Emotions of hopelessness after reading climate fiction described as a feeling that one will not experience positive emotions or improvements regarding climate change”. Below an example with the interviewee “Isabella”.

Isabella:<sup>1</sup> “*Well, they’re hopeless [the cli-fi books] they are gloomy and it’s kind of like: Oh well you know there’s nothing to be done and we are all doomed. [...] And then, I feel like there is no hope, then I can easily feel paralysed and no point trying to do anything.*”

Looking at the quote from Isabella, it can be seen that she refers to climate fiction as what she calls “hopeless and gloomy”. Moreover, she goes on to discuss climate fiction conveying the hopelessness she feels by saying “*there is nothing to be done*” and “*we are all doomed*”.

Besides the feelings of hopelessness, she also addresses a feeling of paralysis, which could imply that the knowledge she gained in climate fiction books makes her feel powerless in the face of climate change. Additionally, she mentions that for her it seems to make no difference

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<sup>1</sup> Atwood, M. (2013). *The year of the flood*. Virago.

or *"no point [in] trying to do anything"*. It might be possible that Isabella views the climate situation in such a complicated way that she might find it challenging to imagine that her actions could still have a positive impact on the climate future. To further illustrate the theme of Hopelessness, the interview with "Luis" can be considered.

Luis:<sup>2</sup> *"Ok, if I were him, probably, I would have killed myself at some point or something, because he seemed to be very depressed and like "What am I even doing here? Like what's happening?" It was weird for him and I felt it."*

In the interview with Luis, a more extreme example of hopelessness can be seen. Luis is expressing strong empathy for the protagonist of the book ("Oryx and Crake" by Margaret Atwood). This is especially noticeable when he says, "It was weird for him and I felt it", indicating a possible connection he feels towards the protagonist and the situation. He indirectly states that he sees no hope in the situation by saying "I would have killed myself at some point". Given that the reader might think about taking his own life in the protagonist's situation possibly indicates that the narrative moved the reader into a thoughtful position.

### **Motivation**

Next, the theme of *Motivation* was frequently discussed by the participants. When considering the views of the participants and their construct of Motivation, the theme can be defined as "Emotions of motivation after reading climate fiction as the willingness to exert physical or mental effort in acting towards a better climate future". The interview with "Roger" shows an example.

Roger:<sup>34</sup> *"But it certainly has influenced me and the course that I followed on imagining climate change that really inspired me to act. So yeah. The discourse around climate fiction novels has definitely already inspired action. Yeah."*

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<sup>2</sup> Atwood, M. (2003). *Oryx and Crake*. Anchor Books.

<sup>3</sup> Lunde, M. (2020). *The end of the ocean* (D. Oatley, Trans.). Harpervia.

<sup>4</sup> Itäranta, E. (2012). *Memory of Water*. Harper Voyager.

Looking at Roger's statement, it can be seen that he mentions that climate fiction has "influenced" him. In the sense that he may have been guided to think about his actions by the illustration of climate change in the dystopian sense contained in the books. He goes on to express his "inspiration to act". In some of the interviews, participants stated that climate fiction is very informative regarding climate change. During the interview, Roger also mentioned that *"Reading climate fiction has filled some gaps in my understanding here and there [...] in terms of climate change I mean"*. Thus, the inspiration expressed by Roger may be related to the possibility that climate fiction gives readers the opportunity to find themselves in situations they have not thought about before while also providing new and relevant information about how to act towards a positive climate future. Unlike Roger, "Lara" believes that climate fiction novels cannot provide much information about climate change.

Lara:<sup>5</sup> *"I felt like, OK, well, you know there are things that I can do which motivate and are hopeful for a better future and one of them is for instance, to not waste food, not waste the resources we have and so on. But there is only little information on how to do it [in cli-fi books]."*

In the quotation above, Lara is already thinking about ways to positively influence the climate future. Besides that, she also expresses feelings of motivation and mentions that some information about what to do in terms of climate change give her hope. Nevertheless, she explicitly mentions that there is generally little guidance on how to do this which could indicate a wish for climate fiction novels to be more informative and guiding.

### **Sadness**

The theme *Sadness*, among others, was frequently discussed by the respondents. Taking the interview data into account, Sadness is defined as "Emotions of sadness after

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<sup>5</sup> Robinson, K. S. (2020). *The ministry for the future*. Orbit.

reading climate fiction as the emotional state of unhappiness about the climate situation, ranging from mild to extreme intensity”. Below an example from “Lara’s” interview is given.

Lara:<sup>6</sup> *“It also stressed me out and it made me sad and like kind of. A helpless feeling as well, even though at the end there was, like this hopeful message with like the seed and stuff like that. [...] And now it's still happening, and it always feels like it will never really change at all. So, I think that kind of like depressed me as well maybe also made me like made it more challenging for me to finish the book because it was a bit too weird and away.”*

Lara is stating that reading a cli-fi novel made her feel stressed and sad. She is displaying strong feelings of hopelessness and also calls it a “helpless feeling”. Moreover, she is constructing emotional pain, to the extent that she describes it as depressing and loses the desire to continue reading the book. Her construct of emotional pain, or rather her sadness indicates feelings of despair, disappointment and also sorrow. The feeling that she must withdraw from the book and stop reading it underlines her unhappiness about the situation depicted in the novel. It seems that the climate crisis depicted in the book causes a pain in Lara which is a natural reaction to catastrophic events (Dodds, 2021; Clayton & Karazsia, 2020; Lawton, 2019).

### **Anger**

Further, the theme *Anger* appeared several times during the interviews, and can be defined as “Emotions of anger after reading climate fiction as the tension comparable to feelings of frustration and perceived injustice in terms of climate change”. As an example, an extract from the interview with Jessica is given below.

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<sup>6</sup> Robinson, K. S. (2020). *The ministry for the future*. Orbit.



Jessica:<sup>7</sup> *“It can really get on your nerves [topic of climate change] because it's like whatever you do, the people who are in power don't listen, kind of. So, you feel a bit like... small.”*

Here, Jessica is mentioning that the topic of climate change is “getting on your [her] nerves”, this indicates feelings of anger. The way she is talking about climate change by saying that “whatever you do, the people who are in power [do not] listen”. It seems like Jessica is shifting the responsibility onto the "people", who are not further defined here. Additionally, Jessica is expressing that she feels “small”. Considering that she has mentioned “people in power” before, she might not see herself having the power to make positive changes regarding climate change. When looking at the way Jessica is discussing the theme, it can be seen that she is putting the blame on others. Unlike Roger, who counts himself among the people who have influence on climate change.

Roger:<sup>8</sup> *“Sometimes, yeah, I'm also angry. Yeah, sort of. Or wonder about how stupid we are being [...] I guess the fact that we have been very much aware of what we are doing. So, we just can't manage to turn it around and I know there are probably a lot of explanations for that, but if you look at it very in a black and white manner. I would say the fact that we can turn it around, so even though we know this has been going on for quite some time. Is what makes me angry. Yeah.”*

Roger is expressing anger towards the topic of climate change and towards the general humanity, calling out their “stupidity” in dealing with climate change. Roger seems to have the feeling that humans are not acting for a better climate future despite knowing the climate situation. He points out that people are aware of the fact that the climate is changing and that no one is trying to turn the tables is making him angry. The way Roger is talking by using

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<sup>7</sup> Kingsolver, B. (2013). *Flight behaviour*. Faber And Faber.

<sup>8</sup> See previous footnotes.

personal pronouns, such as “we can turn it around” or “we know this has been going on for quite some time” he seems to include himself into the group at which he is angry.

### **Shock**

Finally, the theme *Shock* was also discussed by several interviewees. The theme can be defined as “Emotions of shock after reading climate fiction as a surge of strong emotions and a corresponding physical reaction (such as paralysis or panic) when thinking about humanities lack of seriousness regarding climate change”. As an example, a closer look at the interview with “Luis” is taken below.

Luis:<sup>9</sup> *“So, it's like, yeah, I don't know often I'm just shocked that it's not taken more seriously or that like not more is happening for a positive change. Constant state of panic, so yeah.”*

In the interview with Luis, his construction of shock can be seen. For him, this shock seems to come from the fact that people, despite the known consequences, are not able to adapt their actions positively. Moreover, he says that he is in a “constant state of panic counter”. This suggests that the issue of climate change and the way it is addressed in the book triggers a sense of panic in him. Finally, what is striking is the way he presents this issue, it appears that he does not count himself among the group that does not take the climate issue seriously indicating that he perceives himself as acting favourably towards the environment.

### **Discussion**

Through the application of thematic analysis using interview data, I examined the constructs of emotions in relation to reading climate fiction. The analysed data comprise eight interviews conducted with participants who have read climate fiction before. In response to the research question: *“How do climate fiction readers discuss their emotions related to reading*

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<sup>9</sup> See previous footnotes.

*climate fiction?*”, a total of five themes were found, namely *Hopelessness*, *Motivation*, *Sadness*, *Anger*, and *Shock*. These findings and their implications will be discussed in the following.

Throughout the data analysis, it was noticeable that the themes identified were highly multifaceted and intertwined with a wide range of different emotions. This becomes particularly noticeable when looking at the codes that belong to the respective themes. As an example, the following codes for the theme *Hopelessness* were discovered: “feelings of powerlessness”, “fear of future”, “feelings of frustration”, “feelings of depression”, “feeling paralysed”, and “losing control”. From this it becomes clear that the theme of Hopelessness comprises people talking about different feelings such as frustration, depression, or fear as subconstructs of Hopelessness. As another example, the corresponding codes to the theme *Sadness*, such as “feelings of stress”, “feelings of helplessness”, or “feelings of hopelessness”, show an interaction with other emotions as well. This interference of other emotions as subconstructs of the overarching theme indicate that the themes are strongly interconnected with each other. According to the analysis, emotions like sadness were also directly related to feelings of hopelessness. Through this finding, it can be seen that the constructs of respondents' emotions show interdependence. In line with the findings of Braniecka et al. (2014), it has been proven that different emotions can be felt simultaneously. As an example, a look at the interview with Lara can be taken. In her interview, she mentioned not only sadness but also simultaneous feelings of hope. In most cases, this is referred to as mixed emotions, which are frequently provoked by complex events (Braniecka et al., 2014). Among such complex events, one can also see the climate issue. In stressful situations, mixed emotions seem to have an advantage. The negative emotions and their effects on the “feeling-human-being” can be mitigated by accompanying positive emotions, thus protecting mental health (Braniecka et al., 2014). The readers of climate fiction feel hopelessness or sadness on the one hand, but in the end, almost all feel a sense of drive and motivation.

Another interesting finding is that *Motivation* was the only positive emotional construct reported by readers of climate fiction. Looking at the codes, such as “inspiration to act” or “knowledge about climate change”, respondents associate motivation with a base of knowledge about the topic of climate change (given by reading climate fiction) or feelings of inspiration. This is similar to the findings of Schneider-Mayerson (2018), who examined the emotional responses of climate fiction readers in his qualitative survey. He found that positive emotions were strongly future-oriented and that readers mentioned "inspiration" frequently. In his research, too, the future-oriented emotions turned out to be the only positive ones. Furthermore, as a result of these experiences of motivation and inspiration, several interview participants reported that climate fiction tends to encourage them to adapt their behaviour positively to climate change and to act in a more eco-responsible way. Climate fiction also appears to give readers suggestions on how to adapt their behaviour. Likewise, in line with the findings of Schneider-Mayerson (2018), climate fiction can serve as a source of information on climate change. Beyond this, one other thing that stood out at the end of the data analysis was the difference in the way the readers talked about themselves in their constructs. To describe this in more detail, one can look at the differences between Roger and Jessica when they talked about the theme *Anger*. While Roger considers himself to be part of the people responsible for the climate crisis; Jessica reports her anger saying that "people who are in power don't listen", indicating that she does not consider herself to be part of this group. These results can be well viewed from the angle of the "locus of control" theory (Lefcourt, 1991). People who develop an internal locus of control believe that they are responsible for their own performance. Those with an external locus of control think that external forces determine their outcomes (Lefcourt, 1991). Applying this theory to Jessica, who relates the negative effects of climate change to external forces and "people in power," she might possess an external locus of control. Roger, on the other hand, relates directly to the group of people who have an impact on climate change and might show an internal locus of control.

### **Limitations and Recommendations**

The qualitative nature of the thesis, allowed to capture the unique and detailed thoughts, as well as expressed beliefs about the respondent's and their emotional experiences with reading climate fiction. The use of thematic analysis and the accompanying coding process permits a fluent data analysis while also allowing to be flexible and deductive in the progress. Nevertheless, since this is a qualitative interview study, it is not possible to draw causal conclusions. Based on the participants' reported emotional responses as a result of reading climate fiction, it must be kept in mind that only the meaning-making of the respondents is captured, therefore it is not possible to verify any of the conclusions.

Another limitation of this thesis is that it was looked at which emotions are triggered but it was not controlled how these emotions are processed or how people adapt to these emotions. Some studies have controlled for how climate change narratives affect the behaviour of readers (e.g., Barraza et al., 2015; Hoeken et al., 2016; Morris et al., 2019). As an example, Green and Brock (2000) found that people who were immersed in a story through narratives tended to develop feelings of empathy and were more likely to have beliefs in real life that were consistent with the stories they were reading. The prosocial behaviour demonstrated by readers of fictional climate change narratives was also examined, revealing that transportation, discussed earlier in the introduction of this thesis, creates feelings of empathy in its readership, facilitates experiential processing, and generates emotional arousal (Morris et al., 2019). For future research, it would be interesting to gain knowledge about how climate change narratives in climate fiction influence the processing of emotions and in what way they can trigger positive environmental behaviour. Further limitations include the unequal distribution of genders, ethnicities, and level of education. The sample consisted mostly of women and none of the participants identified as non-binary or divers. According to Bennett et al. (2010), women tend to read more fictional books than men which can serve as an explanation for the sample distribution. Moreover, it is noticeable that respondents were mainly of Caucasian origin having

higher education. The results can therefore not be applied to other ethnicities or educational status.

Based on the limitations presented above, suggestions for future research can be drawn. First and foremost, the sample distribution regarding gender, ethnicities, and level of education needs to be tackled by future research. It is important to have a careful distribution to get results from all angles. As an example, people who have higher education tend to read more and to inform themselves on topics such as climate change more intensively than people without higher education (Lee, 2018; Rhee & Scales, 2001). Given this, the analysed data is of unique nature it is not possible to draw conclusions from the results without excluding different groups of people. Next, future research can expand on the findings of this thesis and look at how the elicited emotions of climate fiction readers is processed.

## **Conclusion**

For the present thesis, I examined the constructs of emotions in relation to reading climate fiction. As a result, the following themes were found describing the most frequent emotions felt by climate fiction readers: Hopelessness, Motivation, Sadness, Anger, and Shock. In the course of the analysis, it turned out that different negative as well as positive emotions can arise which appeared to be multifaceted and intertwined. However, the theme *Motivation* was the only positive emotional construct reported by readers of climate fiction. Climate fiction also appears to give readers suggestions on how to adapt their behaviour positively to environmental issues. At the end of the data analysis, the way the readers talked about themselves in their constructs stood out. While some of the interviewees counted themselves among the group of people responsible for climate change, others opted out. The findings stand in connection to the implications that climate fiction serves as a source for knowledge about climate change and as motivation for eco-friendly behaviour. Most importantly, the thesis is highlighting the emotions that can be elicited by reading climate fiction. These findings can

provide a basis for interventions in order to help people cope with their emotions or to promote positive actions towards climate change.

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## **Appendix A**

### **The Interview Protocol**

#### **Climate-Fiction: Interview Protocol**

**Ask for their age and gender without assuming that people identify with the traditional binary division.**

**Ask for occupation and education.**

**Make sure you know their ethnicity and where they live in the world. Note that nationality is not ethnicity!**

1. How would you describe your views on climate change?
2. How would you describe your actions in terms of climate change?

**Next, we will move on to talk a little bit more about climate fiction or cli-fi, the kind of fiction that deals with climate change more or less directly.**

**Just to check, do you have an idea of what kind of literature we are talking about now?**

3. How much climate fiction have you read?
  - a. More than one: Could you tell me the names of some climate fiction books that you have read?
  - b. One: Which book was it?
4. How long have you read climate fiction?
  - a. When did you read your first book of climate fiction?
5. How much do you read in general?
  - a. Mostly cli-fi or something else?

6. What was the latest climate fiction book you read and when was it?
7. How was the reading experience (of the last cli-fi book you read)?
8. What is the best cli-fi book you have read?
  - a. Why it is the best?
9. How do you decide which cli-fi books to read?
  - a. That is, where do you hear about books to read?
10. What do you think has made you read climate fiction?
11. Do you discuss these books with other people in person or online?
  - a. Which topics are addressed in these discussions?
12. How have your experiences of reading climate fiction been in general?
13. What kind of emotions have you felt when reading cli-fi?
14. How realistic do you think are the scenarios depicted in the cli-fi books that you have read?
15. Has reading climate fiction influenced your feelings with regards to climate change?
16. Has reading climate fiction changed anything in your thoughts about climate change?
17. Currently, researchers are very interested in negative feelings related to climate change, for example, climate-change related anxiety or “climate anxiety”. Have you experienced anxiety because of climate change?
  - a. If yes, has reading climate fiction had an influence on your climate anxiety?
  - b. Do you think climate anxiety impacts how you think and act with regards to climate change?

18. Has reading climate fiction changed the way you perceive your chances to do something about climate change?
19. Has reading climate fiction changed something concrete in your actions with regards to climate change?
20. Has reading climate fiction influenced your perception of the future?
  - a. If yes, in what way?
21. Is there something else you would like to add about climate fiction reading or climate change that we have not yet discussed?

**Many thanks to you for your time and for your interesting answers!**

## Appendix B

### Information Sheet

#### Information Sheet

Research Project: *Narratives in Managing Climate Change Agency and Emotions: Experiences of Reading Climate Fiction*

The genre of climate fiction -fiction that depicts how people experience and deal with climate change- is becoming increasingly popular. Yet, not much qualitative empirical research exists on the topic; we do not know much about the *experiences* of people who have read cli-fi.

This research project, conducted at the **University of Twente**, at Psychology, Health, and Technology, investigates the experiences and perceptions of people who read climate fiction. Assistant Professor Heidi Toivonen is the PI of the project, supervising students of psychology who conduct interviews and analyze the data as parts of their course assignments and theses.

The research involves collecting online one-on-one interviews, mostly in English but also in the native language of the participant if that is not English and the interviewee is fluent in it. The data is collected for the purposes of students writing their research module assignments as well as Bachelor's and Master's theses and can eventually be used for scientific publications by Dr. Toivonen and possibly other scholars.

Naturally, participation in this research is voluntary. The interviews will last for 30-60 minutes. The participant will be asked questions about their experiences of reading climate fiction books and perceptions of climate change. The participant can decline to participate and **withdraw from the research at any time**, without any negative consequences, and without providing any reasons.

The interviews will be audio- and videorecorded. The interview data will be fully anonymized upon transcription, and all interviewees will be referred to with pseudonyms throughout the analysis and in the final written works produced from the data. Individual participants cannot be identified from the assignments, theses, or articles written using this data.

The BMS ethical committee / Domain Humanities & Social Sciences at the University of Twente has approved this study (application number 220077). The data will be stored safely according to the data policy of University of Twente until 10 years after the research has ended.

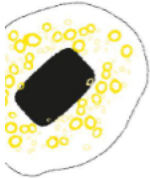
Responsible researcher and contact person for questions about the research and rights of research participants: Assistant Professor Heidi Toivonen [h.k.toivonen@utwente.nl](mailto:h.k.toivonen@utwente.nl)



## Appendix C

### Consent Form

UNIVERSITY OF TWENTE.



**FROM:**  
H.K. Toivonen  
P (+31) (0)6 189 20135  
h.k.toivonen@utwente.nl

**DATE**  
24-2-2022  
**OUR REFERENCE**

**PAGE**  
1 of 2

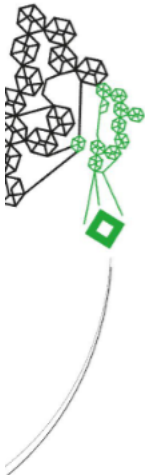
**SUBJECT**  
**Consent for Participation in Interview Research**

1. I volunteer to participate in a research project concerning climate fiction reading. I understand that the project is designed to gather information about people's experiences and thoughts on climate change -themed fictional books as well as about how people think about climate change.

2. My participation in this project is voluntary. I understand that I will not be paid for my participation. I may withdraw and discontinue participation at any time without any negative consequences. If I decline to participate or withdraw from the study, no one will be told and it will not affect my relationship with University of Twente.

3. I understand that most interviewees will find the discussion interesting and thought-provoking. If, however, I feel uncomfortable in any way during the interview session, I have the right to decline to answer any question or to end the interview.

4. Participation involves being interviewed by a student of psychology from University of Twente, using the Zoom or Teams video call platform. The interview will last approximately 30-60 minutes. Notes will be written during the interview. The interview will be recorded, and the anonymized transcript made on the taped video call will be used for research purposes.



UNIVERSITY OF TWENTE.

DATE  
24-02-2022

OUR REFERENCE

PAGE  
2 of 2



5. I understand that the researcher will not identify me by name in any reports using information obtained from this interview, and that my confidentiality as a participant in this study will remain secure. Subsequent uses of records and data will be subject to standard data use policies which protect the anonymity of individuals and institutions. If requested, I can have access to the transcript of my interview by email. I can also request that the final assignment, thesis and/or research article will be sent to me when it has been accepted/published.

6. The data will be destroyed 10 years after the end of the project (that is, in December 2032), or any time at my request.

7. No one outside of the project or not involved with writing assignments, theses, or papers using this data, will have access to the raw notes, recordings, or transcripts.

8. I have read and understand the explanation provided to me. I have had all my questions answered to my satisfaction, and I give my consent to participate in this study.

9. I have been given a copy of this consent form.

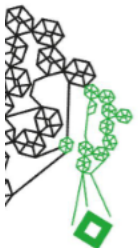
Signature of the participant

.....

Signature of the interviewing student

.....

Signature of the supervisor, Assistant Professor Heidi Toivonen



*Heidi Toivonen*