Constructing Climate Emotions – An Interview-Based Exploration with Climate Fiction Readers

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Abstract

Climate fiction, as a literary genre discussing anthropogenic climate change, has been emerging progressively. These narratives could serve a larger purpose for lay people to make sense of climate change and help them potentially cope with climate anxiety. However, empirical research on how readers of climate fiction evaluate their reading experiences, also on an emotional level, is scarce. Thus, this paper investigated how climate fiction readers discuss climate emotions. A categorical approach inspired by thematic analysis was administered to twelve transcripts resulting from interviews conducted as a group effort of students. Subsequently, two main categories were identified: *Emotions in the context of reading climate fiction* and *climate anxiety as a distinctive emotion*. The first category can be subdivided into three reading stages: interviewees experience emotions before, during and after reading climate fiction. The second category outlined different causes of climate anxiety, namely climate change but also climate fiction. Although interviewees discussed temporary climate anxiety during reading climate fiction, the overall reading experience appeared to be largely positive for the readers, more so than reported in previous studies. Concludingly, this study shows how climate fiction is reported to help its readers to connect to climate change emotionally. Moreover, concrete suggestions for other areas of expertise about the possibilities of climate fiction are made.

Keywords: Climate change, climate fiction, climate emotions, climate anxiety, interviews

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Readers

The discourse around anthropogenic climate change is an ever-present subject in the contemporary societies of today. Further, there is a growing body of research and tangible evidence pointing toward the detrimental consequences materialising in increasing temperatures, sea levels, and overall natural disasters (IPCC, 2022). In addition to research focusing on climate change, fiction addressing climate change has emerged increasingly over the last decades (Schneider-Mayerson et al., 2020). Followingly, what will be further referred to as *climate fiction* is now considered a "genre (...) in its own right" (p. 267, Johns-Putra, 2016). More specifically, climate fiction deals with the consequences of environmental crises, most often in the form of science fiction or dystopian novels (Schneider-Mayerson, 2018). Nevertheless, said literature can also be categorised as fantasy, thriller, or romance, further undermining the diversity of climate fiction (Johns-Putra, 2016). Henceforth, for the sake of this thesis, climate fiction will be defined as all literary pieces discussing anthropogenic climate change and its implications on a socio-cultural, political, environmental, economic, and/ or individual level, either in an explicit or more implicit, metaphorical way. Furthermore, it should be noted that the term climate change, specifically, does not have to be addressed verbatim for literature to qualify as climate fiction, as can be seen in one of climate fiction´s fundamental novels, VanderMeer's *Annihilation* (2014). Thus, due to the complex and various forms climate fiction can take, the particular definition of climate fiction in this thesis depends on whether the participants of this study perceive the book as discussing climate change or not.

But why is climate fiction, from a scientific standpoint, worth investigating in the first place? Generally speaking, climate fiction is a promising but uncharted literacy genre in terms of its implications for how its readers deal with climate change. More specifically, differing sectors could benefit from gaining more insights into the genre´s effects. These include,

amongst others, the field of climate psychology as well as science communication. Further, it is also still vague how climate fiction could contribute to education, especially on climate change. Thus, the following paragraphs will go into more detail on the few existing findings and theories of climate fiction´s impacts on its readers.

For climate psychology, it could be of interest how climate fiction influences its readers' emotional, mental, and cognitive states. In their study, Vrasidas et al. (2015) outline how science fiction, an adjacent genre to and overlapping with climate fiction, helps engage readers with the story emotionally whilst simultaneously making the future more concrete for them. Similarly, in her commentary, Johns-Putra (2016) observes how, by addressing societal, economical, and ecological collapses, climate fiction could have the potential to induce a wide range of emotions. Nevertheless, these presumptions remain unanswered due to a lack of research on the genre´s effects.

Moreover, climate fiction could aid science communication in grasping how fictional narratives about climate change are applied to the real world and how scientific information in climate fiction, even though it is fictional, is perceived by readers. A certain notion that narratives can be used strategically to influence people to action (Bushell et al., 2016) is prevalent in science communication. More concretely, understanding the process of human acquisition and interpretation of scientific facts proves to be of pressing importance concerning the number of climate change sceptics and deniers (Harvey et al., 2018). Therefore, comprehending how these narratives are perceived could aid science communication in tailoring their messages. One of the few empirical studies on the genre by Schneider-Mayerson et al. (2020) states that climate fiction has the potential to affect its readership's ideologies, attitudes, and even actions. Still, these effects returned back to baseline one month after the experiment, meaning, the genre could lack long-lasting persuasive power. Again, the findings by Schneider-Mayerson et al (2020) cannot be clearly evaluated in another setting, as further research is scarce.

Another field in which climate fiction could be of possible interest is the educational sector. Leavenworth and Manni (2021) outline how, as the genre of climate fiction keeps expanding, its messages could be used in educational settings, influencing the minds of the generations to be affected by the concrete impacts of climate change. On a more theoretical level, Malpas (2021) enunciates in her commentary on climate fiction that the genre could have an impact to make such a large and complex concept as climate change more concrete and tangible. However, it is still unclear how climate fiction implicitly educates its readers about environmental changes.

Generally speaking, the implications of climate fiction for the aforementioned fields are vast, however, a lack of diverse research disables to draw definite conclusions about the genre´s effects – if that can even be achieved when talking about something as subjective and complex as literature. Thus, this study´s aim is to contribute to and possibly refine the theoretical framework existing on climate fiction as well as to increase the research that is done on climate fiction and its ramifications. Still, investigating all the aforementioned theories exceeds the scope of this thesis. Therefore, this study will focus on a singular possible effect of climate fiction on its readers, namely, the *emotional* aspect.

However, before looking at the existing research on emotions in the context of climate fiction, one should examine the bigger picture. Climate fiction is heavily influenced and inspired by climate change. Whilst climate change is not fictional but a real and present threat, its future effects in the years to come are still unclear and can only be anticipated to a certain degree. This is something climate fiction writers often use to their advantage by creating fictional settings and worlds based on these uncertainties (Johns-Putra, 2016). Thus, when investigating the emotions arising from reading climate fiction, looking at the emotional responses of climate change, the inspiration for the genre, could be of benefit.

Stated as one of the most commonly elicited emotions in the context of climate change is *climate anxiety*. Recent literature has progressively addressed its negative effects and

subsequent urgency (Clayton & Karazsia, 2020, Pihkala, 2020). More concretely, climate anxiety is a multi-faceted phenomenon including a wide range of negative emotions such as anger, distress, helplessness, guilt, worry, and grief (Pihkala, 2020). This complexity is also reflected in the terminology surrounding climate anxiety, which is also coined as *ecological grief* (Cunsolo & Ellis, 2018), *solastalgia* (Albrecht, 2005), *environmental distress* (Higginbotham et al., 2006), and/or *ecological anxiety* (Pihkala, 2020). For this thesis, negative emotions evoked by climate crises will further be referred to as climate anxiety. Further, it should be noted that, generally, climate anxiety is not a pathological disease or a sub-component of anxiety disorders but rather a social, individual, and also understandable response to climate change. The developers of a climate anxiety survey highlight how worrying about climate change is an appropriate reaction, and, thus, should not be over-pathologised (Clayton & Karazsia, 2020). Still, prevalences of climate anxiety were assessed in order to grasp certain risk groups for this emotion. The phenomenon seems to be more prevalent in younger populations, indigenous communities, and individuals with high environmental identity, meaning, people who perceive themselves as having a close connection to nature (Clayton & Karazsia, 2020). This is also in line with the findings of Clayton´s literature review (2020), which points out that climate anxiety especially affects those who are concerned about the environment. In conclusion, other emotions are naturally also a part of experiencing such a complex and unprecedented phenomenon as climate change. Still, climate anxiety appears to be a highly prevalent emotion in this context and is, therefore, also worth examining when investigating climate fiction.

Taking into account that people who are worried about climate change both are said to most likely experience climate anxiety (Clayton, 2020) as well as read climate fiction (Schneider-Mayerson, 2018), a certain overlap between climate fiction readers and people reporting climate anxiety could be expected. Indeed, when measuring emotional responses to reading climate fiction in a self-report study on climate fiction readers, only 26 % of said

responses were positive (Schneider-Mayerson, 2018). In contrast, the largely negative reported feelings ranged from helplessness, sadness, guilt, fear, depression, anger, and nervousness, many of which are also overlapping with experiencing climate anxiety. In line with his study´s findings, Schneider-Mayerson (2018) cautions further on how climate fiction could possibly paralyse and demobilise its readership instead of evoking positive emotions due to the multitude of experienced negative affect.

Still, these findings have to be regarded with deliberation due to a multitude of influences. Most importantly, assuming that climate fiction mainly elicits negative emotions in its readers might neglect the positive aspects of reading and absorbing the messages climate fiction contains. For instance, Schneider-Mayerson (2018) describes how, whilst negative emotions are more predominant in his participants during climate fiction reading, positive emotions are still felt when identifying with characters within the storyline. Further, experiencing inspiration and encouragement were also mentioned by the study´s participants (Schneider- Mayerson, 2018). Similarly, in their commentary, Doyle (2021) outlines the complex emotion of hope in climate fiction. The recognition of hope can especially be found in relation to the characters and endings in the books (Doyle, 2021). Further, as Schneider-Mayerson (2018) clarifies, experiencing climate anxiety does not eradicate the possibility of experiencing positive affect due to reading climate fiction, meaning that both emotionally positive and negative emotional responses could exist simultaneously when reading climate fiction. Therefore, positive responses should be expected from climate fiction readers as well, even though they may not be represented in current findings on the topic.

Overarchingly present, however, is a lack of research into climate fiction´s possible positive outcomes in its readership. Currently, for climate fiction readers, the most discussed emotion in the context of climate fiction is climate anxiety (see Schneider-Mayerson, 2018, for instance). Whilst this emotion should not be ignored, more research into the complex emotions of reading climate literature is needed. Further, Schneider-Mayerson´s study (2018)

is of quantitative nature by employing self-reports. However, as emotions rarely occur singularly and unambiguous, a qualitative study, where interviewees are given the space to go verbally into depth about their emotions could offer insight into the intricate responses to climate fiction. This could add to Schneider-Mayerson´s research in two substantial ways: Firstly, his findings could be re-evaluated based on possible new insights. Secondly, another study would contribute to a more diverse theoretical framework.

Hence, this thesis could provide valuable insights into understanding the manifold emotional responses that climate fiction most likely evokes in its readers. In conclusion, the complexity of the relationship between climate fiction and climate emotions as well as the contradicting findings in previous literature gives rise to directly and qualitatively investigating climate emotions as discussed by climate fiction readers. Therefore, in this thesis, the research question is as follows: *How do climate fiction readers discuss climate emotions in a qualitative interview setting?*

Methods

Design

This study was part of a larger body of ongoing research investigating climate fiction in general, with this thesis focusing on how readers of this genre discussed climate anxiety, specifically. Ethical approval was granted by the Ethics Committee of Behavioural, Management and Social Sciences at the University of Twente on the 11th of February, 2022 (approval number: 220077). Overall, the data collection was conducted from February to May 2022. A team of psychology bachelor's and master's students, 10 in total, worked together on the research project. Each student interviewed at least four participants. However, for this study, twelve interviews were analysed. Thus, to work as efficiently as possible, conducting and sharing interviews was a group effort amongst the team. In addition to the four interviews

conducted with the researching student, eight interviews were randomly selected from the group´s collaborative effort, resulting in a total of twelve interviews for the data analysis.

Participants and Procedure

To take part in this study, the participants should have read at least one book which they consider climate fiction or be in the process of reading it. More specifically, as the genre of climate fiction can be described as highly diverse and nuanced, the participants were free to choose whatever literature they personally identified as climate fiction. Another inclusion criteria comprised for the participants to sign the written consent form and agree to all terms and conditions thereof (see Appendix A).

Participants were recruited via several routes: Firstly, on SONA systems, a platform for students at the University of Twente, the study with an incentive of two credit points was published. Moreover, all researchers recruited additional interviewees via convenience sampling from the social environments of the students. Additionally, the study was distributed on social media (e.g., Instagram, Reddit, LinkedIn). Henceforth, all interviews were conducted one-on-one in Microsoft Teams. Participants received an invitation link prior to the interview. In case the participant was approached by the researcher, the information letter (see Appendix B) and informed consent (see Appendix A) were sent to them beforehand, otherwise, the informed consent was to be signed in the meeting. The interviews were set to last between 30 and 60 minutes and were conducted in English. All interviews were audio-recorded as well as transcribed by Microsoft Teams. The resulting transcripts were adjusted and anonymised by the corresponding researcher. Each interviewee was assigned a pseudonym, which they are referred to in the transcripts and further results. At last, the transcripts were uploaded to the shared database on Microsoft Teams.

Overall, twelve interviews have been analysed by the researcher of this thesis. The interviewees´ ages ranged from 20 to 69. Furthermore, ten identified as female and two as

male. Regarding their nationality, nine of the participants were from Germany, one from Romania, one from Sweden, and one from Lithuania. Six interviewees lived in the Netherlands, five in Germany and one in Sweden. The participants were mostly psychology university students (six in total). The remaining participants worked as a freelance lecturer, social worker, environmental scientist, and procurement law worker. Additionally, one participant was self-employed and one was a former, now retired teacher.

Materials

Foremost, the preliminary interview scheme, provided by the supervisor, was reviewed by all students. The interview protocol was formulated in such a way to capture a variety of aspects of climate fiction reading, e.g., social influences or motivational factors to read the genre. Minor adjustments were carried out, such as adding specific questions required for answering research questions sufficiently. Furthermore, pilot testing was administered by the supervisor ($N = 3$). The resulting semi-structured interview scheme used by this research group consisted of three parts (see Appendix B). Firstly, the interviewees´ demographics were inquired about, followed by two general questions examining the interviewees´ views and actions concerning climate change, respectively. The last, substantial part explored information regarding climate fiction and its effects on the participant. Overall, it consisted of 18 open questions, of which nine questions included further probes. Firstly, some general questions regarding the amount and type of climate fiction were presented (e.g., question 6: "What was the latest climate fiction book you have read?"). Secondly, the reading experiences of the participants are investigated (e.g., question 8: "What is the best climate fiction book you have read?"). Thirdly, interviewees were asked about their motivations to read climate fiction. Further, it was assessed whether climate fiction changed something in the interviewees´ feelings, thoughts, actions, and perceptions to do something against climate change and/or of the future. Henceforth, the participants´ emotions were explored more in-depth by actively addressing the specific emotions they have felt during reading (question 13).

Similarly, after providing a short definition of climate anxiety, they were asked if they do or did experience climate anxiety and whether climate fiction has had an influence on this. At last, interviewees were asked whether they would like to provide additional points of discussion (question 18).

Moreover, an information letter including all necessary information for the participants was provided by the supervisor (see Appendix C). Lastly, the informed consent form, to be signed by all interviewees, can be found in Appendix A.

Data Analysis

Investigating how climate emotions were discussed by climate fiction readers, inspiration from the inductive thematic analysis approach was taken (Braun & Clarke, 2006, 2016). Thus, the data analysis roughly followed the six-step process as suggested by Braun & Clarke (2006). The first step, familiarising oneself with the data, included skimming and re-reading the transcripts. In addition, all parts of the transcripts deemed as relevant to the research question were duplicated into Atlas.ti 9. This served the purpose of minimising the amount of data which was not relevant to the research question of this thesis (e.g., motivational factors of reading climate fiction), making the content more coherent for later analysis. For this study particularly, specific attention to the questions regarding emotional responses (i.e., questions 1, 7, 12, 13, 15 and 17, see Appendix B) was paid. However, if the interviewees discussed emotions in responses to other questions, these responses were included as well. The units of analyses consisted of half-sentences, full sentences or several sentences, in which participants talked about (a) specific emotion(s). All emotional accounts were then coded accordingly (e.g., accounts of anger were coded with *anger*). After this initial round of coding, the causes for these emotional responses (i.e., was anger reported as rooted in reading climate fiction or from observing climate change in general?) were further analysed to logically classify the emotions into categories. From this point onwards, it became clear

that thematic analysis, in its traditional sense, could not be applied directly to the data. As the interviewees did not talk too extensively about their emotional responses to climate fiction and climate change (meaning, they usually referred to emotions in one to two sentences, at most), elaborate themes could not be identified and coded. Rather than forcing themes on the data and skewing the intentions of the participant´s accounts, therefore, the responses relevant to the research question were sorted into categories instead of themes. Henceforth, a "categorical approach" inspired by thematic analysis is utilised. All codes and categories were then revised in a continuous process until the research question could be answered in a substantiated and extensive way. Moreover, the names and definitions of the categories were adjusted accordingly, resulting in the final coding scheme. Further, as all interviews were coded by the student herself, the reliability of the conclusive codes and categories was ensured in consensus meetings with the supervisor.

To illustrate the coding process more concretely, an excerpt from one of the interviews will be used. When asking "Frieda" about her general reading experience of climate fiction, she answered: "It was really interesting. I'm always very interested in books that show this type of utopic society (...). So, yeah, I really enjoyed it because it was obviously (...) an unusual genre, so I didn't know what to expect". The first two sentences were coded with *reading climate fiction as an interesting experience,* whereas the last sentence was coded with *reading climate fiction as an enjoyable/ exciting experience.* As both codes summarise the overall reading experience of Frieda, they belong to the sub-category *concluding emotional experiences after reading climate fiction* and the main category of *emotions in the context of reading climate fiction.*

Results

Two main categories were constructed based on the analysed data. Firstly, *emotions in the context of reading climate fiction* summarise all reported emotional responses to the genre of climate fiction on a more abstract level. Secondly, *climate anxiety as a distinctive emotion*

in the context of experiencing climate change and reading climate fiction entails more

concrete descriptions of experiencing climate anxiety as an emotional state specifically. The

second category, therefore, is on a more concrete level, concentrating on only one climate

emotion instead of several. However, this category is extended to the context of climate

change, in addition to climate fiction, as climate anxiety was reported in both these

circumstances. Therefore, the main categories 1 and 2 overlap in the sense that climate

anxiety can both be an emotion originating from reading climate fiction (*main category 1*) and

defined as distinctive emotion emerging from both climate change as well as climate fiction

(*main category 2*). See Figure 1 for a visualisation of these categories.

Figure 1

Visualisation of the two Main Categories in their Wider Contexts
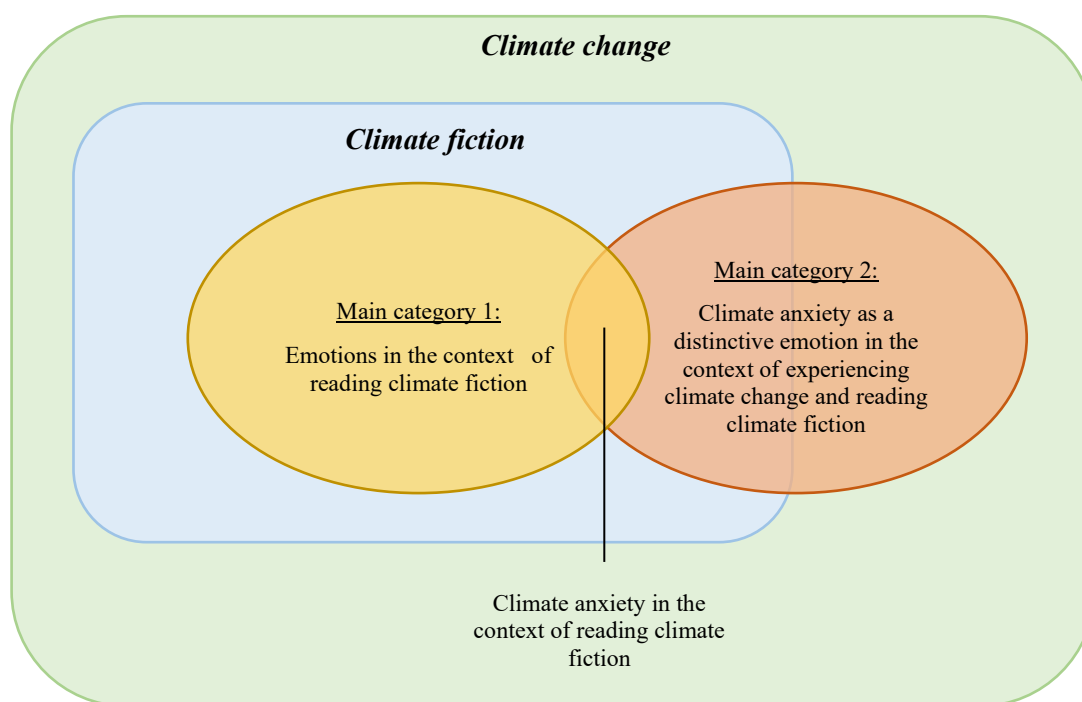
Main Category 1: Emotions in the Context of Reading Climate Fiction

The first main category is divided into three sub-categories. These sub-categories are

chronological classifications of the reading process, more specifically, *before* reading, *during*

reading, and *after* reading climate fiction. This process emerged naturally during the data

analysis, as the aforementioned reading stages were mentioned by different participants. This indicates that the participants conceptualise reading as a more or less chronological process, which is reflected in their interviews. See Table 1 for an overview of all codes and sub-categories for main category 1.

Table 1

Overview of the Reported Emotions when Reading Climate Fiction

Context stage	Sub-categories	Definitions	Codes	Code occurrences**	Interview occurrences ($N = 12$)***
Before reading	*Expecting reading CF[a] to be an emotional experience*	Any genre-specific emotional responses that readers expect from reading CF	1. Anticipating reading CF to be interesting	10	6
			2. Anticipating reading CF to be inspiring	7	5
			3. Anticipating reading CF to be depressing	6	4
			4. Anticipating reading CF to be enjoyable	3	3
During reading	*Experiencing emotions during reading CF*	Any temporary emotional responses to characters, content and stories which are reported to be felt during the process of reading CF	5. CA[b] due to CF in general*	19	9
			6. Feeling moved/ touched	18	7
			7. Interest/ curiosity	18	7
			8. Sadness	12	7
			9. Enjoyment/ excitement	11	6
			10. Hope/ relief	9	5
			11. Hopelessness	6	3
			12. CA due to CF making a negative future more concrete*	4	3
			13. Guilt	4	2
			14. Anger	4	4
			15. CA is not expressed during reading CF*	3	2
			16. Shock	3	2
			17. Stress	3	1
			18. Inspiration	2	2
			19. Gratefulness	2	2
			20. Boredom	2	2
			21. CA due to identifying with the characters/ content of CF*	2	2
			22. Surprise	2	2

Context stage	Sub-categories	Definitions	Codes	Code occurrences**	Interview occurrences (N = 12)***
After reading	*Concluding emotional experiences after reading CF*	Any overall emotional "memories"/ outcomes from reading the genre CF as a whole; refers to the full emotional experience of reading CF rather than specific, temporary emotions which might have been felt during reading	23. Reading CF as an enjoyable/ exciting experience	22	9
			24. Reading CF as a depressive experience	10	5
			25. Reading CF as an interesting experience	5	3
			26. Reading CF as a moving/ touching experience	4	3
			27. Reading CF as a hopeful experience	3	3
			28. Reading CF as an inspiring experience	3	3
			29. Reading CF as a scary experience	1	1

Note. All codes marked with an Asterix (*) overlap with the second main category and will be elaborated on in the second main category.

[a] CF = climate fiction

[b] CA = climate anxiety

** Total occurrences meaning how often the code was coded

*** Total occurrences meaning how many of the twelve interviewees mentioned the code in their interview

Sub-Category 1: Expecting Reading Climate Fiction to be an Emotional Experience

Even before reading climate fiction, readers discuss anticipating certain emotional experiences to be tied to this specific genre as a whole rather than a specific book belonging to climate fiction (coded 26 times in total as expressed by nine interviewees). Occasionally, the participants mentioned more than one anticipation in their account. For instance, "Lisa" described climate fiction as potentially depressive but she also expressed climate fiction to be possibly enjoyable and interesting as well.

Most dominantly, six participants expect the reading process to be interesting to them. For the majority of them, this stems from a general interest in climate fiction as a genre as well as in climate change as a phenomenon. For instance, "Claire" states that "it's an

interesting topic, 'cause there is a climate change". Moreover, five participants anticipate climate fiction to be an inspiring encounter. Describing reading climate fiction, "Leila" articulates that she "would definitely buy more fiction literature that addresses climate change because it really makes you think". Further, three interviewees report expecting reading climate fiction as an overall enjoyable experience. More concretely, "Muriel" thinks that she "[...] likes this fictional way to deal with the climate change because it's not so very serious as… scientific texts". This further implies how climate fiction, in contrast to other text forms, is more entertaining to convey climate change, which might help readers connect more easily to the topic.

In contrast, four interviewees also expressed that climate fiction reading generates negative emotions, namely, depression. Lisa states that she does not exclusively read climate fiction because she"[...] wants to read for entertainment and less for (...) reading about depressing topics". She continues to add that climate change is a scary topic for her. Similarly, "Lyn" mentions how reading climate fiction regularly "would [not] be the best for my mental health because I think that it would probably [...] make me quite sad".

Overall, this sub-category shows how reading climate fiction is socialised in such a way that certain, mostly positive, expectations are tied to the genre, even though the readers may not have read much of it.

Sub-Category 2: Experiencing Emotions during Reading Climate Fiction

The interviewees mostly discussed emotional responses as arising during reading climate fiction, thereby constituting the most discussed sub-category (coded 124 times in total as expressed by twelve interviewees). These emotions are often described as temporary in nature as well as compatible with other emotions. Thus, it is very common to feel more than just one emotion during reading climate fiction. Predominantly "positive" emotions reported during reading climate fiction include *interest, enjoyment/ excitement, hope/ relief, inspiration*, and *gratefulness*. In opposition, "negative" emotions are verbalised as *sadness,*

hopelessness, guilt, anger, stress, and *boredom*. The "negative" emotion of *climate anxiety*

will be elaborated on in the second main category. Emotions, which cannot be divided into the

analogy of "positive" or "negative" emotions encompass *feeling moved/ touched*, *shock* and

surprise. Generally, when further referring to "positive" or "negative" emotions, the

researching student does not mean to classify the interviewees´ meaning-making into

something the interviewees have not verbally stated themselves. This distinction is rather a

way to structure the results more for the sake of an organisational system and does not mean

to overlook that an emotion rarely can be either exclusively positive or negative.

As the most prevailing positive emotion, *interest/ curiosity* is mentioned by seven

interviewees 18 times. Most often, this is felt in relation to the plot and the writing styles of

the books. Muriel mentions how in The History of the Bees[1] (see Appendix D), "the most

interesting was that [Maja Lunde] connects different persons or families in different centuries

and brings them at the end together". Concerning the writing style, Frieda states: "So, I

thought the book[3] was really interestingly written because it had these, basically two

timelines. The ending was also kind of interesting, kind of vague". Similarly, *enjoyment/*

excitement also mostly refers to the stories that climate fiction tells. Athena explains how she

feels "excitement [during reading Oryx and Crake[2], see Appendix D]. Like, more for the

storyline, not for the topic".

In contrast, *hope/ relief* refers more to the way climate fiction paints the future in a

possibly hopeful light rather than specific writing aspects. "Regina" notices how the books

she read ended "in a hopeful manner and there were always sparks of hope in there". In a

similar way, two participants mention feeling *inspiration* during reading. More specifically,

Lyn reports having felt "quite inspired by it [...], I also kind of wanted to [...] live in a tree for

a while", referring to how, in The Overstory[3], climate activists lived in trees to protest against

forest clearance. Lastly, two participants also mentioned the emotion of *gratefulness*, as the

books show how the present living conditions might be better than in the future. Lisa

describes that it "makes you [...] consider your [current] situation and [... you] also feel more grateful for that".

As the main emotion, which is neither exclusively positive nor negative, *feeling touched/ moved* was mentioned across seven interviews. This emotion appears more abstract than others in the sense that participants do not describe it in greater detail other than experiencing feeling touched. Oftentimes, this emotion is reported in relation to the plot or to the book´s ability to evoke emotions within the readers. For instance, Leila states that reading "does something to people". Similarly, Frieda notes that the environmental literature "touched [...] a really emotional side or [...] the sensitive side of people". Another emotional experience which is neither positive nor negative is *shock* during reading. This refers to the plot of the books and to the descriptions of (climate) change in societies and the general environment in these books. With regards to future depictions, Frieda mentioned how, in Oryx and Crake[2], "the way that world was built [...] was just kind of shocking". Two participants also refer to feeling *surprised* during reading. "Bryan", for example, recalls from reading Waterworld[4], "I guess sometimes like off surprise 'cause, especially at the end".

Lastly, a multitude of negative emotions during reading was discussed by the participants. Most present, aside from *climate anxiety,* was the experience of *sadness* in the descriptions of seven participants. Oftentimes, they refer to certain plot aspects which made them sad, for example in The Last Wild Horses[1], as "the first winter arrived and three young horses died" (Muriel). Correspondingly, *hopelessness* also refers to how climate fiction shows a negative future paired with a lack of agency and hope. James explains how climate fiction "made me… the feeling that you can´t [...] change disaster". In contrast, *guilt* indicates how climate fiction induces the interviewees to reflect on their participation in climate change. Only two participants reported experiencing this feeling. During reading, Lisa remembers having felt "really bad about [...] the whole situation and climate change". Moreover, having experienced *anger* often concerns the plot of the books or their general message regarding

climate change. Recalling his reading experience of Greenwash[5], James states that he felt "angry, especially at this book, ´cause it´s a lie, [...] which costs lives". For James, this specific book revealed information they had not known before from the food industry, which, upon learning, created anger. Two interviewees also expressed having felt bored due to the books´ plots. Claire elaborates how "in general, I was bored" during reading The History of the Bees[6]. Lastly, one participant (Lyn) felt *stressed* during reading, which was their "most prominent [emotion]" besides sadness.

Concludingly, reading is discussed as evoking a multitude of emotions, which can be felt simultaneously or at different points in time depending on the plot of the book. In Frieda´s account, for instance, three emotions arose simultaneously during reading Oryx and Crake[2]: "I was shocked a few times, I remember. Then also… Uh, curiosity. Uhm. What else? What else? (*thinking*) I don't know. I was interested". Overall, positive, negative, and undefined emotions are displayed as being part of the reading experience of climate fiction with relatively equal distribution.

Sub-Category 3: Concluding Emotional Experiences after Reading Climate Fiction

Lastly, reading climate fiction was summarised as an emotional experience by its readers (coded 48 times in total as expressed by twelve interviewees). Rather than the specific emotional "bursts" the participants reported feeling during the reading process, this sub-category refers to how interviewees discussed looked back on their experiences with climate fiction on a more reflective level. Still, these reading experiences are, again, not mutually exclusive and can complement each other. Once more, the reading experiences can also be roughly divided into "positive" and "negative" experiences.

Even though the participants often mentioned having felt negative emotions during the reading process, in hindsight, almost all participants evaluate reading climate fiction to be an *enjoyable/ exciting experience.* This, on one hand, refers to the plot and writing of the read books, and, on the other hand, the overall reading experience of the readers. Frieda reflects

how she "really enjoyed it. Like, I would definitely read more, I think, from the genre". For three participants, climate fiction additionally also has been an *interesting experience*. More specifically, Frieda explains that "I´m always very interested in books that show this type of utopian society". Similarly, three participants reported reading climate fiction as a *hopeful experience,* especially towards the future. During the interview, "Amy" reflects back on how she felt hope: "[Climate fiction] gave this perspective that even if we see some of the worst effects of climate change there could still be a good life for some people in the future". Correspondingly, *inspiration* was also reported as showing new perspectives to the readers. For example, through climate fiction, Claire thought: "I have a balcony, maybe I [...] could change something there [for the bees]".

Further, in line with the aforementioned sub-category (*feeling touched/ moved during reading*), having a *touching/ moving overall reading experience* was also discussed by the participants. Again, this experience cannot be categorised as exclusively positive or negative. When elaborating on this, the wording remains largely abstract. For instance, Regina recites how "[reading] was really emotionally touching as well".

At last, some reading experiences can also be described as negative in their nature. Most dominantly, a *depressive experience* was reported by five participants in total. For James, this leads him to "also read [other] things to escape and go in my fantasy in the mind. [...] I can´t read so much of it [climate fiction]. [...] That´s sometimes so depressive". Finally, one participant ("Athena") mentions how reading climate fiction can also be a *scary experience* for some individuals: "I also know people who got a lot more anxious from it".

Overall, when reflecting back on the comprehensive experience of reading climate fiction, mostly positive experiences were reported by the participants, with *enjoyable* and *exciting experiences* being the predominant occurrence in retrospect. As Athena summarises her general reading experience of Oryx and Crake[2] (see Appendix D), she says:

"Uhm, yeah, I enjoyed reading it. Then usually, when you draw connections to

the actual real climate crisis, obviously it's not very fun, I guess. But I don't

know, I don't feel like my mood doesn't go down or anything when I read it.

Yeah, so I think… I enjoyed it"

This outlines how experiencing certain temporary emotions during reading climate

fiction (see *sub-category 2*) does not necessarily result in a similar overall reading evaluation.

For Athena, even though the topics climate fiction addresses might not always be "very fun",

reading the genre still results in enjoyment. However, feeling sad after reading climate fiction

was also discussed by some interviewees.

Main Category 2: Climate Anxiety as a Distinctive Emotion in the Context of Reading Climate Fiction and Experiencing Climate Change

When analysing verbal accounts of emotions related to climate change and climate

fiction, one emotion that emerged as being in contrast with the other emotions is *climate*

anxiety. This is due to the complexity of climate anxiety as an emotion. Other aforementioned

feelings such as anger were reported as originating, for instance, from the plot of a certain

book. Climate anxiety, in contrast, was discussed by the participants as arising from a

multitude of causes (see Table 2). To highlight this variation and avoid possibly overlooking

said causes, the second main category serves as an exploration into these discussed origins

and nuances of climate anxiety. These nuances prove to be worth investigating, according to

the interviewees´ accounts. For instance, in outlining the relationship between climate

anxiety, climate change, and climate fiction, Athena explains how the different contexts have

a different effect on her climate anxiety:

"What makes me anxious about the real-life projections is when, for example,

floods happen and that kind of stuff and people die. And in climate fiction,

those parts usually already have happened. And, of course, that´s still not a nice

world to live in. But, the major distinction events, where people are really

scared of, that's already behind the.m"

More concretely, observing climate change (i.e., floods) results in climate anxiety, for

Athena. Nevertheless, she perceives how, in climate fiction, such catastrophes are usually not

addressed, as they are, in these narratives, a thing from the past. For her, "that´s still not a nice

world to live in" but still does not generate the same amount of climate anxiety. Thus,

exploring these two contexts in which climate anxiety could arise proves important. Notably,

none of the participants expressed the construct of *climate anxiety* by stating the term

verbatim. Nevertheless, due to the theoretical background of climate anxiety, as discussed in

the introduction of this thesis, the researching student could identify when interviewees talked

about climate anxiety in more colloquial terms, such as "worrying about the future", and

subsequently coded it as *climate anxiety.* See Table 2 for an overview of all codes and sub-

categories incorporated in the main category 2.

Table 2

Overview of the Different Contexts in which Climate Anxiety occurs for Interviewees

Context stage	Sub-categories	Definitions	Codes	Code occurrences**	Interview occurrences (*N* = 12)***
CC[c]	*CA as expressed in the larger context of CC*	Any CA experienced when thinking or talking about CC, its causes, its present consequences, and its tangible implications for the future on an individual or larger level	30. Generalised CA	13	9
			31. CA due to worry about future generations	6	3
			32. CA due to a lack of individual control	3	2
			33. CA due to noticeable changes in the direct environment	3	3
			34. CA due to social interactions	3	1
			35. CA due to threat to own life	3	3
			36. CA due to species extinction	3	3
			37. CA due to an uncertain future	2	1
			38. Explicitly denying experiencing CA	6	3

Context stage	Sub-categories	Definitions	Codes	Code occurrences**	Interview occurrences (*N* = 12)***
CF	*CA as expressed during reading CF*	Any CA in response to characters, content and stories of CF during reading CF	5. CA due to CF in general	19	9
			12. CA due to CF making a negative future more concrete	4	3
			21. CA due to identifying with the characters/ content of CF	2	2
			15. CA is not expressed during reading CF	3	2
			39. CA declines after not reading CF	3	3

Note. *c* CC = Climate change

** Total occurrences meaning how often the code was coded

*** Total occurrences meaning how many of the twelve interviewees mentioned the code in their interview

Sub-Category 4: Climate Anxiety as Expressed in the Larger Context of Climate Change

Climate anxiety due to climate change, its causes, its present consequences, and its tangible implications were discussed by nine participants (coded 42 times in total). More concretely, *generalised climate anxiety* was verbally expressed by nine participants in total. Generalised climate anxiety refers to climate anxiety as emerging from climate change as a whole phenomenon without being specified by the interviewees whether this relates to a more specific consequence of climate change, such as global warming or species extinction. Participants most often mentioned it when being asked "Do you experience climate anxiety?" by answering in an affirmative way. For instance, Athena states how "I'm anxious about climate change, definitely". Lisa adds that "it's a common thing, [...] if you care about it, you start getting anxiety".

Next to *generalised climate anxiety*, there are also forms of climate anxiety due to a concrete cause. For instance, three participants experience *climate anxiety due to worry about future generations*. This might be tied to their ages, as these interviewees are older than 40 (Claire: 41; "Elisabeth": 55; Leila: 57). For example, Leila describes how she "mainly fears for my children and the generations after them". Furthermore, *climate anxiety due to a lack of*

individual control refers to how climate change feels out of an individual´s control and, thus, evokes feelings of climate anxiety. Regina articulates it as follows: "And during the [election] time, like waiting, I felt so hopeless and also a bit like whatever I do isn't enough". Moreover, *climate anxiety due to noticeable changes in the direct environment* describes the tangible changes due to climate change. Leila remembers a vacation: "We also like to go to the island of Dinger in Holland [...], and there you can see how the people are also preparing for the rise in sea level. The dikes getting improved and that´s already frightening". One participant (Claire) shares how *social interactions* also play a role in her experience of climate anxiety. For her, her employer is "thinking very negative about the future and about climate change and this influenced me much more". Another cause for climate anxiety as expressed by three participants is the *threat to one´s own life*. More concretely, Athena states how "I´ve had friends who are anxious about what will happen to them".

Further, *climate anxiety due to species extinction* differs from *climate anxiety due to threat to one´s own life* in the sense that a whole species instead of a single life is considered. This also leaves out the concern for one´s own safety and introduces the concern for other living beings as a species instead. Overall, three participants report experiencing this particular type of climate anxiety. When recalling that 25 years ago, they saw much more insects compared to the present time, Claire describes how she is "sometimes a little bit afraid that this could really happen", referring to species extinction. The other two participants refer to humans when thinking of species extinction, such as Regina voicing her concern that "for humans, I think, we might go extinct". Lastly, climate anxiety in the context of climate change can also be induced by an *uncertain future,* as discussed by one participant, Frieda. For her, "it's scary because these things could happen as well as they could not happen. And I have, like, we have no idea how it's gonna evolve".

In contrast, some participants do not report climate anxiety, especially when being generally asked whether they experience climate anxiety, as summarised by the code

explicitly denying experiencing climate anxiety. For all three participants, this has different reasons. For Frieda, climate change "doesn´t seem to be [...] very close, like it´s gonna happen tomorrow". Amy reports not experiencing climate anxiety as she "works with it", which helps her cope rather than worry. Lastly, Bryan does not "think about climate change that often".

Overall, climate anxiety due to climate change is a largely present phenomenon in the interviewees with a wide spectrum of differing causes. This is, for instance, illustrated by Elisabeth´s answer to her views on climate change: "Yes (...), I think that climate change is real, I can see its consequences with my own eyes. It makes me scared, for myself but [also] very strongly for my children". Here, one can see *generalised climate anxiety* but also *climate anxiety due to threat to one´s own life* as well as *climate anxiety due to worry about future generations* in her response, further undermining the complexity in which climate anxiety may be caused by climate change.

Sub-Category 5: Climate Anxiety as Expressed during Reading Climate Fiction

Climate anxiety could also result from reading climate fiction, specifically. *Climate anxiety due to climate fiction*, in general, refers to the whole genre inducing anxiety and was most predominantly mentioned (31 times by nine interviewees). For instance, Muriel reports feeling "concern and (...) fear" during reading, which is similar to the experience Lisa had: "It´s not as fictional as other fiction books. And then, […] it´s definitely scary".

Still, some participants also elaborated on more specific causes within climate fiction for their climate anxiety. *Climate anxiety due to climate fiction making a negative future more concrete* generally indicates how climate fiction scares its reader by outlining negative projections of the future. Regina describes this process as follows: "So, it [climate fiction] kind of makes you think about your future as well and [I] get a bit frightened about what we might face in the future". Lisa also experienced this and adds that reading climate fiction[7] (see Appendix D) "was kind of like a show of how things could be". Thirdly, climate fiction can also induce *climate anxiety due to identifying with the characters/ content of climate fiction*,

which was experienced by two interviewees. As Leila summarises: "The moment you read the novel[3], […] you identify with it […] and with the protagonists too. So, I think it that increases the fear […] one experiences a lot".

In addition to the code of *climate anxiety is not expressed, climate anxiety is not expressed during reading climate fiction* specifically also was reported by two participants. For example, Athena expressed that due to "our real-world and future projections of what our world will look like, those scenarios, to me, give me more anxiety [than climate fiction]". Another point of discussion for the participants was that even if climate fiction could induce climate anxiety, this was discussed by them as temporary. Three interviewees mentioned how *climate anxiety declines after not reading climate fiction*. More specifically, Lyn mentions how "long-term, it [climate anxiety] hasn´t really changed all that much". Similarly, Bryan reports how experiencing climate anxiety "wasn´t a prolonged experience afterwards". This shows how climate fiction, in its emotional influence concerning climate anxiety as expressed by the readers does not necessarily have a sustained effect.

Discussion

Overall, reading climate fiction, as discussed by some of its readers, is an emotional experience fluctuating from a variety of positive to a range of negative emotions. These emotions can be felt before, during, and after reading, with the active reading stage being the most mentioned amongst interviewees. Within this stage, *climate anxiety due to climate fiction* was reported most frequently. Following, the second and third most recurrent codes were *feeling moved/ touched* and *interest/ curiosity.* In hindsight, the reading experiences were mainly reported to be *enjoyable/ exciting,* however, this was followed in frequency by *depressive experiences* as discussed by the interviewees. Further, specifically, climate anxiety was revealed to be of a certain complexity due to the several origins of this emotion. Whilst climate change and its implications are mentioned to play a role in this, climate fiction was

also reported to generate climate anxiety. In the consecutive paragraphs, these main findings

will be elaborated in the light of previous studies.

Firstly, reflecting back on emotions arising during reading climate fiction, a wide

variety thereof is discussed. In line with Schneider-Mayerson's (2018) self-report study on

climate fiction readers, the reported feelings are often in line with climate anxiety. Being the

most occurring code in this context (*climate anxiety due to climate fiction in general*),

therefore, underlines the findings of the said study further. Other negative emotions

overlapping with his findings are *anger, guilt, sadness,* and *hopelessness.* However, whilst

Schneider-Mayerson (2018) reports only 26 % of responses as being positive ones, the

interviewed participants of this thesis mentioned positive emotions more frequently and

explicitly. Previous papers highlight hope as a possible emotional outcome of reading climate

fiction (Schneider-Mayerson, 2018; Doyle, 2021). Similarly, the participants of this study

indeed report hope as arising from reading climate fiction. Nevertheless, other positive

emotions are more predominant in their accounts, namely *excitement/ enjoyment* and *interest/*

curiosity. These findings show that hope, whilst occurring in the reported feelings of

participants, is not the only experienced positive emotion in the context of climate fiction.

Instead, emotions such as excitement or curiosity are mentioned more frequently. Generally, a

wide array of emotions were reported, undermining the complex and intricate responses to

reading climate fiction.

A possible explanation for the findings of more positive accounts, when compared to

Schneider-Mayerson´s study (2018), is the qualitative nature of this study. Perchance, in

contrast to a self-report study, the participants could express their emotions more freely in a

verbal way during the interviews. Whilst one question was focused entirely on whether

climate anxiety is experienced by the interviewees, the other questions concerning emotions

were asked in an open and non-leading way. This, once more, ensured an unbiased data

collection. That way, apparently, the participants could have felt more inclined to talk more

about the joys of reading climate fiction. Another possible explanation for the discrepancies in findings could be the differing contexts in which the studies were administered. Whilst Schneider-Mayerson´s sample is largely US-American, the sample of this study was solely comprised of European participants. Again, this could have influenced the results based on cultural and societal differences.

Moreover, participants also reflected on reading climate fiction as a whole (see sub-category 3: *Concluding emotional experiences after reading climate fiction*). Between the stages of feeling emotions during reading (*sub-category 2*) and after reading (*sub-category 3*), a discrepancy can be detected. More concretely, even though negative emotions were reported often during reading climate fiction, an overall *enjoyable/ exciting reading experience* was mentioned most prominently after reading. This further confirms the participants´ accounts of how the emotions during reading were often recalled as being temporary. Thus, these emotions might not influence the subsequent overall evaluation of reading the book as a whole. More concretely, it could be assumed that, whilst negative emotions might (temporarily) arise, positive emotions help to balance out negative affect and, thus, create a positive overall reading experience. Further supporting this theory are the additional, largely positive accounts of positive reading experiences (five out of seven codes), with participants also reporting reading climate fiction as a whole to be an *interesting, hopeful,* and *inspiring reading experience*. In contrast, previous literature cautions how climate fiction might demobilise its readers through possibly evoking negative emotions (Schneider-Mayerson, 2018), however, these findings suggest otherwise. Again, this could be attributed to the differing natures of the study and this thesis, with qualitative studies allowing participants to explain their accounts in greater depth than it might occur in quantitative self-reports. Moreover, in contrast to Schneider-Mayerson (2018) are studies such as Vrasidas et al. (2015), which state that narratives help the readers to connect to the story emotionally. Moreover, narratives also bring about greater emotional arousal than mere facts (Morris et al.,

2019). Similarly, the participants of this interview study state that climate fiction *helps* rather than discourages them to connect to the topic more easily and more emotionally. This is generally also reflected in the codes of *feeling touched or moved* during reading, which was generally described as an emotional but rather abstract and indescribable experience for the readers. Overall, the general reading experiences of participants are largely of positive nature, showing how, despite negative affect, climate fiction can be beneficial for its readers.

At last, considering the second main category, which focuses on climate anxiety more concretely and specifically, shows the different origins of said emotions. Generally speaking, climate anxiety, as discussed by the interviewees, can result from climate change and climate fiction. Whereas climate change induced climate anxiety is stated to be less temporary, climate anxiety due to climate fiction is mainly discussed as a brief emotion. This is especially reflected in the code *climate anxiety declining after not reading climate fiction.* Once more, this shows how negative affect due to climate literature can and does decline after reading and adds to the proposition that negative emotions during reading can still be followed by a generally positive reading experience. Once more, this shows that climate fiction, despite being under accusation of demobilizing by inducing negative emotions such as helplessness or fear (Schneider-Mayerson, 2018), is reported as beneficial by its readers.

Strengths and Limitations

One major strength of this study is its novelty. Prior to this study, only a few empirical studies with a limited assembly of researchers investigating climate fiction´s effects on its readers had been conducted (Schneider-Mayerson, 2018; Schneider-Mayerson et al., 2020). Thus, this study adds to previous findings and brings new aspects into focus, such as the different emotional responses which appear to be influenced by different "reading stages" of participants. This can also be attributed to the method of qualitative, investigative interviewing, as utilised in this study. This way, interviewees can express their meaning-making more elaborate, freely, and substantiated.

However, the limitations of this study are as follows: Firstly, analysing the reading experiences of climate fiction can be difficult as this instrument (climate fiction) varies in its forms, lengths, complexities, and many more aspects. As previously outlined in Schneider-Mayerson et al. (2020), one cannot be entirely sure which aspect of a book might have resulted in a certain emotional response due to the aforementioned factors. Additionally, the participants' demographics might have skewed the results of this study. More concretely, most of the interviewees are psychology students, making them more educated, possibly more climate concerned and more knowledgable about (their) emotions. Lastly, only two of twelve participants identified as male. This results in more accounts from people who identify as women, which might influence the way climate emotions have been discussed in the interviews. Non-binary, agender and other gender non-conforming individuals are, therefore, also excluded from this study. This highlights, once more, the need for including larger, more diverse samples in today's research.

Future Implications

Foremost, for future research, this study outlines how it is important to consider *when* emotional responses arise during the process of reading climate literature. Through the accounts of the participants, it became apparent that reading climate fiction is not only an emotional experience during reading but also before and after reading. Therefore, subsequent studies should, when exploring emotional responses to literature, be aware of the fact that such reactions occur in several periods for an individual and consecutively include opportunities for participants to express their recollections of emotions at all points in time.

Furthermore, climate fiction, as a genre, has the potential to be applied in different contexts. As outlined in the introduction of this thesis, climate fiction could aid climate psychology, science communication as well as climate education. Taking the findings of this study into account, several suggestions for these fields of expertise can be proposed. Firstly, climate fiction is shown to induce a wide and complex range of emotions in its readers, which

climate psychology could use to its advantage. By employing different climate fiction narratives in an experimental setting, concrete emotional responses to certain climate fiction could possibly be assessed, making it clearer which aspects of climate fiction induce certain types of emotions in readers. In a similar way, science communication could test how emotional responses to climate fiction increase, for instance, a willingness to engage in collaborative action against climate change or to inform oneself about eco-friendly behaviours. Lastly, climate fiction can be used in educational settings, i.e., classrooms, to inform about climate change in a more personal and less serious way. Even more, climate fiction could help pupils and students show concrete ways and actions to move from demobilising climate anxiety to more positive experiences in the face of climate change by introducing other emotions such as hope or inspiration. Generally speaking, climate fiction appears to be a promising and versatile aid for areas of expertise which are concerned with climate change in some form or another. However, for all these fields, one should remain cautious of over-employing a genre as a tool for science when it is, in essence, like most literature, intended for enjoyment.

Conclusion

Climate fiction can help understand climate change on a more emotional and personal level than when simply encountering scientific facts, information and news. By incorporating characters, plots, and personal stories, climate fiction can generate greater emotional responses. As highlighted by this novel study, this is also reflected in climate fiction readers´ accounts. Thus, climate fiction might have the potential to help laypeople understand and connect to climate change individually. While negative emotions, especially climate anxiety, can arise, those emotions are reported to be largely temporary and do not change the fact that reading climate fiction as a whole is most dominantly mentioned to be a positive experience. Therefore, as a genre, climate fiction seems to serve the purpose of highlighting the relevance

and urgency to act and engage with climate change, also on an emotional level, in our

contemporary societies of today.

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Appendices

Appendix A

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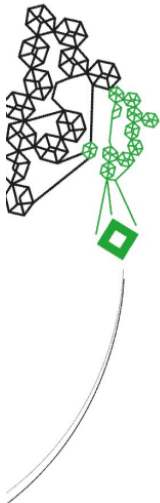
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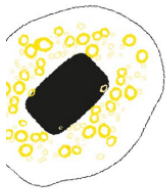
FROM:
H.K. Toivonen
P (+31) (0)6 189 20135
h.k.toivonen@utwente.nl

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
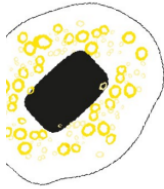
5. I understand that the researcher will not identify me by name in any reports using information obtained from this interview, and that my confidentiality as a participant in this study will remain secure. Subsequent uses of records and data will be subject to standard data use policies which protect 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.
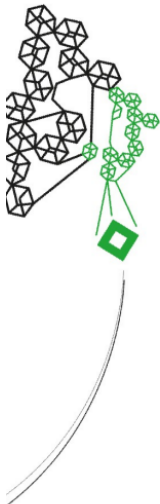
9. I have been given a copy of this consent form.

Signature of the participant

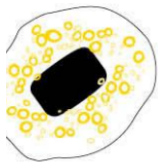Signature of the interviewing student, Anna Nouria Albert

N. Albert

Signature of the supervisor, Assistant Professor Heidi Toivonen

Heidi Toivonen

Appendix B

## Information Letter

UNIVERSITY OF TWENTE.

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.
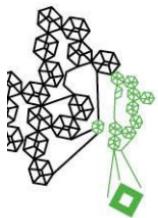
Naturally, participation in this research is voluntary. The interviews will last for 30-60 minutes. The participant will be asked questions about their experiences of reading climate fiction books and perceptions of climate change. The participant can decline to participate and **withdraw from the research 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

Appendix C

Interview Scheme

Age ....

Gender identity ....

Occupation ....

Education ....

Ethnicity ....

Place of residence ....

Q1: How would you describe your views on climate change?

Q2: 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?

Q3: How much climate fiction have you read?

  P3a: One: Which book was it?

  P3b: More than one: Could you tell me the names of some climate fiction books that you have read?

Q4: How long have you read climate fiction?

  P4: When did you read your first book of climate fiction?

Q5: How much do you read in general?

P5: Mostly cli-fi or something else?

Q6: What was the latest climate fiction book you read and when was it?

Q7: How was the reading experience (of the last cli-fi book you read)?

Q8: What is the best cli-fi book you have read?

P8: Why it is the best?

Q9: How do you decide which cli-fi books to read?

P9: That is, where do you hear about books to read?

Q10: What do you think has made you read climate fiction?

Q11: Do you discuss these books with other people in person or online?

P11: Which topics are addressed in these discussions?

Q12: How have your experiences of reading climate fiction been in general?

Q13: What kind of emotions have you felt when reading cli-fi?

Q14: How realistic do you think are the scenarios depicted in the cli-fi books that you have read?

Q15: Has reading climate fiction influenced your feelings with regard to climate change?

Q16: Has reading climate fiction changed anything in your thoughts about climate change?

Q17: 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?

P17a: If yes, has reading climate fiction had an influence on your climate anxiety?

P17b: Do you think climate anxiety impacts how you think and act with regard to climate change?

P18: Has reading climate fiction changed the way you perceive your chances to do something about climate change?

Q19: Has reading climate fiction changed something concrete in your actions with regards to climate change?

Q20: Has reading climate fiction influenced your perception of the future?

   P20: If yes, in what way?

Q21: 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 D

Book Titles, Publication Years and Authors in Order of Appearance

[1] Muriel read three climate fiction novels and is, thus, either referring to *The History of Bees* (2015), *The End of the Ocean* (2017) or *The Last Wild Horses* (2022) by Maja Lunde

[2] *Oryx and Crake* (2003) by Margaret Atwood

[3] *The Overstory* (2018) by Richard Powers

[4] *Waterworld* (1995) by Max Allan Collins

[5] *Greenwash* (1996) by Jed Greer

[6] *The History of Bees* (2015) by Maja Lunde

[7] Leila read two climate fiction novels and is, thus, either referring to *The History of Bees* (2015) by Maja Lunde or *The Whale at the End of the World* (2015) by John Ironmonger