Master Thesis

A Qualitative Study on Climate Fiction and Readers' Perceived (Non)Agency in Dealing

with Climate Change

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August 2022

Abstract

During the past years, it has been argued that climate-fiction (cli-fi) has the unique potential to provide readers with tools to deal with the topic of climate change. With the increased risks that climate change poses to our globe and the strong public uncertainty associated with the topic, the challenge of supporting people to engage more efficiently with the overall climate crisis appears to become increasingly pressing. Thus, it seems important to start exploring whether and how cli-fi could really serve as a psychological tool for people to feel more willing and capable to deal with climate change. This research therefore analyses how cli-fi readers discursively construct their (non)agency - their perceived ability and willingness (or the lack thereof) – in relation to climate change. Results drawn from a thematic analysis of 17 interview transcripts reveal 6 agency themes illustrating various ways of how participants construct climate related (non)agency in negotiation with reading cli-fi. The most common (non)agency theme that emerged was "Individual agency", followed by "Collective agency", "Limited collective agency" and "Paralyzed individual agency". In this context, readers expressed 4 cli-fi reading experience aspects as enhancing their agency (*awareness creation, emotional involvement, perspective change, knowledge delivery*) and 3 aspects as tempering (*emotional involvement, lack of emotional involvement, lack of displayed solutions*). In the light of this research, climate fiction was expressed as having a twofold impact, with some people perceiving the books as supporting their climate related sense of agency, whereas others perceived the books as an obstacle. Overall, the thesis underlines the complexity and variety of the agencies and suggests that previous assumptions about the impact of climate fiction might have been overly simplistic. Finally, this thesis makes suggestions to future research and the field of bibliotherapy in terms of treating patients with climate anxiety.

Keywords: Climate change, Climate fiction, (Non)Agency, Qualitative research, Interviews, Psychology of reading

Introduction

In this research, I focus on climate fiction books, and relate them to the notion of "(non)agency" - the perceived ability and willingness (or the lack thereof) to deal with the challenge of climate change (Dürbeck et al., 2015; Toivonen, 2022). Following a thematic analysis, I take a qualitative look at how people construct themselves as experiencing and acting agents in relation to climate change and whether and how they present climate-fiction as being helpful or not in supporting their agency. With the results of an interview study, I illustrate what themes emerge when readers construct their climate related (non)agencies in negotiation with climate fiction books and which particular cli-fi reading experience aspects are expressed as enhancing or tempering in terms of agency. In the following sections, I will begin with defining important terms and a brief literature review.

Over the past decades, climate change has been acknowledged as one of the greatest global challenges (IPCC, 2022). Today, it is undeniable that it has posed increased risks to both human society and environmental systems, and scientists have argued that global temperatures will continue rising, meaning that the climate situation and resulting threats will probably escalate at one point in the future (Feldman & Hart, 2017; Ziska, 2008). The challenge of supporting people to engage more efficiently with the overall climate crisis to limit serious societal and ecological damage therefore seems to become increasingly pressing (Feldman & Hart, 2017).

Since the current climate challenges force a cognitive and behavioral transformation within the population, scholars have stressed the need for different communication tools that could support people in getting more aware of and involved with the topic of climate change (Brown & Westaway, 2011; De Meyer et al., 2020; Hoggett, 2019). In this context, narratives are assumed to work as a fairly persuasive and effective communication tool, as they have been found to influence perceptions of climate risk and policy preferences among the public (Bevan et al., 2020; Bushell, 2017; Fløttum & Gjerstad, 2016; Hillier et al., 2016; Lejano et

al., 2013; Moezzi et al., 2017). Yet, research still yields conflicting results. On the one hand, literature indicates that narratives enable people to make sense of complex issues and that presenting information in a narrative form has the potential to increase its uptake because they are sometimes easier to comprehend and audiences tend to find them more engaging than more scientific communication (Howarth, 2017; Hillier et al., 2016; Moezzi et al., 2017). On the other hand, further studies claim that packaging information into a narrative format can also be counterproductive, as it might provoke fear, which in return may leave people with a sense of helplessness, thereby demotivating climate action or even causing climate anxiety and depression (Chapman et al., 2017; Hicks & Holden, 2007; Kleese & Golden, 2019).

While much research has already indicated the persuasive effectiveness of narrative storytelling in general (Bushell, 2017; Hillier et al., 2016), less studies have investigated readers' experiences with climate fiction specifically. In fact, with the growing awareness of the catastrophic effects of climate change and the increasing public demand on climate related narratives in the fields of art and literature (Schneider-Mayerson, 2017), literary work of fiction about the topic has been gaining popularity, and "climate fiction", also called "cli-fi", has emerged as a new book genre over the past years (Milner & Burgmann, 2017; Schneider-Mayerson, 2017). Even though first climate fiction novels appeared in the 1960s already, cli-fi has been recognized as a distinct category only recently (Bell, 2021). To elaborate, instead of using the term "genre", cli-fi can be best understood as a loose umbrella term for a wide range of fiction that overall thematizes the effects of climate change and often portrays how humans deal with the crisis (Goodbody & Johns-Putra, 2019; Schneider-Mayerson, 2018). More specifically, climate fiction often includes a combination of science fiction and utopian or dystopian futures that are based on the reality of climate change challenges that humanity is facing right now (Goodbody & Johns-Putra, 2019; Schneider-Mayerson, 2018). However, there is still a considerable variety in cli-fi books that makes it almost impossible to catch the characteristics in one single description (Death, 2022). Examples of well-known cli-fi books

which are often discussed in literature on climate fiction (Bell, 2021; Milner & Burgmann, 2017; Schneider-Mayerson, 2017), are "Flight Behavior"[1], "The Overstory"[2] and "Parable of the Sower"[3].

Even though cli-fi has developed as a work of art within the growing climate challenges, some literature has recently suggested that climate fiction might have the unique potential to support people in dealing with the topic of climate change (Trexler, 2015; Goodbody & Johns-Putra, 2019; Malpas, 2021). In fact, it has been assumed that cli-fi has the potential to help people understand climate change better and to inspire them to take action (Milner & Burgmann, 2017; Schneider-Mayerson, 2018). More specifically, scholars expect that it is especially the created future scenarios that might increase readers' imagination potential through visualized effects, causes and a general feeling of global warming (Irr, 2017), but also inspire climate actions, as their portrayal might reduce the distance people tend to perceive between them and the climate consequences (Schneider-Mayerson, 2018; Uildriks & Peeters, 2020). In this context, literature suggests that especially utopian novels may help in changing behavioural intentions, as they reflect a sense of "where we want to be" and show how future societies might deal with the climate risks (Hinkel et al., 2020; Uildriks & Peeters, 2020). According to a study conducted by Schneider-Mayerson (2018), the impacts of cli-fi might be twofold. On the one hand, findings of the study suggest that the creation of potential future scenarios might indeed increase readers' imagination potential of climate related futures, which in return convinces them on the importance and urgency of climate change. However, on the other hand, results also suggest that reading cli-fi often evokes negative emotions such as climate anxiety, which might also be counterproductive (Schneider-Mayerson, 2018). Yet, there is not much empirical research on cli-fi and most of

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[1] Novel by Barbara Kingsolver, published in 2012 by HarperCollins
[2] Novel by Richard Powers, published in 2018 by W. W. Norton & Company
[3] Novel by Octavia E. Butler, published in 1993 by Four Walls Eight Windows

the aforementioned aspects are merely theoretical guesses or expectations about whether and
how cli-fi might work as a tool to support people in dealing with the topic of climate change.

Beside climate fiction, another important focus of this study is "agency". Generally,
agency has been viewed as a psychological attribute of a single individual (Bandura, 2006;
Gallagher, 2000). In this context, literature has primarily defined agency as the process to
behave intentionally, meaning that an individual has a feeling of control over their actions as
well as the respective consequences and that they can reflect upon these (Alkire, 2005;
Bandura, 2006; Moore, 2016; Yamamoto, 2006). Until now, most climate related studies have
focused on the related concept of "efficacy". Going back to the roots of this construct, the
psychologist Albert Bandura (1977) coined the term "self-efficacy", referring to an
individual's belief in their own ability to organize and implement action to achieve a certain
goal or produce desired results. With this focus on believed capacity to produce change,
efficacy research in the context of climate change has especially highlighted the role of
"individual efficacy", which relates to the belief of an individual in their capacity to mitigate
climate change, and "collective efficacy", which refers to the belief in the whole system or
society being able to work together and take climate mitigation actions (Chen, 2015; Hornsey
et al., 2021). Additionally, further research on efficacy has focused on the importance of
"response efficacy" in the face of climate change – actor(s)' perceived effectiveness of their
actions to mitigate change (Bostrom et al., 2019) – and "participative efficacy beliefs" – an
individual's belief to mitigate climate change through own contributions on a collective level
(Bamberg et al., 2015; van Zomeren et al., 2013). Given these findings, efficacy research
seems to yield valuable insights with regard to humans in the context of climate change.
However, studies usually include very narrow definitions, leaving little room for additional
meaning making, and thereby appearing to be more suitable for quantitative research
(Toivonen, 2022). Thus, in her recent article on climate related agency, Toivonen (2022) has
argued that an extended view of the traditional agency notion might especially valuable in the

context of qualitative research, as it allows for capturing the variety in people's expressed climate related experiences, including thoughts and feelings, as well as actions. Thus, to keep the approach to my study more flexible, I decided to focus on agency here.

Instead of viewing agency as a psychological attribute, I take a look at how agency manifests in language, thereby approaching agency as a discursive construction (Toivonen et al., 2019; Toivonen, 2019, 2022). More specifically, I understand (non)agency in my study "as the discursive attribution of a variety of aspects of being-ableness or the lack thereof both to oneself and to other humans in relation to climate change" (Toivonen, 2022). Thereby, I also consider "non-agency" in my study, which I define as "lacking or otherwise troubled being-ableness" (Toivonen et al., 2019; Toivonen, 2022). Even though the notion of agency is not studied much in relation to climate change yet, a recent study conducted by Toivonen (2022) has made a start in contributing to a wider understanding of climate related human agency, approaching it from a more language-oriented view. Here, people mainly constructed themselves as feeling responsible and (capable of) taking individual climate mitigation actions ("individual agency"), mitigating climate change through a collective effort ("collective agency") and able to detect and rethink (false) narratives about climate change circulating within society ("critical agency") (Toivonen, 2022).

Scope of this Study

With the growing body of literature on theoretical expectations about the potential of climate fiction (Goodbody & Johns-Putra, 2019; Malpas, 2021; Trexler, 2015;) and the strong public uncertainty associated with the climate crisis (Constantino & Weber, 2021; Heal & Kriström, 2002), it seems important to start exploring whether and how cli-fi could really serve as a psychological tool for people to feel more willing and capable to deal with the topic of climate change. Therefore, I aim at catching a first glimpse of whether people express reading cli-fi as supporting them in their climate related sense of agency. Thus, findings of the study might not only have implications for future empirical work on climate fiction, but also

for climate communications as well as clinicians focusing on the treatment of climate anxiety, for example.

Overall, the role of cli-fi novels in helping with the creation of climate agency seems to remain still unclear until now, which is why I will focus on cli-fi readers' perceptions on (non)agency in my study and analyse them using Thematic Analysis. I specifically explore: *"How do cli-fi readers see the reading of cli-fi as helping or not helping their perceived ability and willingness (agency) to deal with the challenge of climate change?"*. To facilitate the whole research process, I split the main research question into the following two sub-questions: *1) "What themes emerge when cli-fi readers express their sense of climate change (non)agency?"* and *2) "Which reading experience aspects of cli-fi do readers express as enhancing or tempering in terms of their agency?"*.

Methods

Design

I conducted this research in form of an interview study and in collaboration of a group of students from the University of Twente, who were all working on the topic of climate fiction. Each student focused on one specific topic, so that experiences of reading cli-fi could be investigated more extensively. The Ethics Committee of the University of Twente approved the research[4] before the start of the data collection.

Participants

For my study, I conducted 5 interviews myself and used further 12 interviews from fellow students for my analysis. Inclusion criteria for participating in the study were the minimum age of 18 years and the former or current reading of cli-fi. To collect participants, personal networks of myself, the other students and the supervisor (Dr. Heidi Toivonen) were used. Thus, some participants were contacted via private messages or by making posts on

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[4] Request number: 220077

different social media platforms (Facebook, Instagram, Reddit), whereas further volunteers

were recruited via Sona Systems, which is a participant recruitment portal that serves to

facilitate data collection. To elaborate on the demographic data of the sample I used (N=17),

participants represented 5 nationalities, with 13 being German, 2 Finnish, 1 Lithuanian and 1

Dutch-Norwegian. Their age ranged between 21 and 60 years, and 14 identified as female and

3 as male. Further, all participants had a relatively high educational level, with almost all

participants having at least a high school degree. Additionally, interviewees differed in their

occupations, with 7 currently studying at the University of Twente. In general, all participants

viewed climate change as a serious issue that portrays danger to our world. They were all

convinced that drastic changes are needed to minimize its consequences. Throughout the

interviews, participants discussed various cli-fi books. Here, notably prevalent titles were

"The History of Bees"[5], "The End of the Ocean"[6] and "Memory of Water"[7].

Materials

       For conducting the interviews, I used an interview guide protocol (see Appendix C),

which was formerly created and piloted by my supervisor in collaboration with the other

students. The guide included questions concerning the participants' general reading habits as

well as their cli-fi reading experiences, related thoughts, feelings and personal perspectives on

the future. Example questions of this guide that were specifically important to the focus of my

study are: *"Has reading climate fiction changed the way you perceive your chances to do*

something about climate change?" and *"Has reading climate fiction changed something*

concrete in your actions with regards to climate change?". In case participants' replies were

succinct or ambiguous, I used probes such as *"Can you elaborate on that?"*, *"In what*

way…?" or just repeated a key-word.

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[5] Novel by Maja Lunde, English version published in 2017 by Simon and Schuster UK
[6] Novel by Maja Lunde, English version published in 2019 by Simon and Schuster UK
[7] Novel by Emmi Itäranta, English version published in 2014 by HarperCollins

Procedure

In case participants were interested in the topic, they were informed in more detail about the research itself and related conditions for participation in an information letter (Appendix A). Before starting the interview, participants had to give their consent to participating in the study on a voluntary basis and their data being anonymously used for research purposes (see Appendix B). Next, they were briefly presented with demographic questions about age, gender, ethnicity, occupation and education. Subsequently, they were presented with the prepared interview questions (see Appendix C). The interviews were conducted via Teams, lasted between 20 and 55 minutes and were recorded and anonymized upon transcription. Afterwards, I translated them, when necessary, into English and produced a transcription, including all spoken words, whereas sounds were excluded.

Data Analysis

The reason why I chose Thematic analysis for analysing the data was that it allows for making sense of collective or shared meanings and experiences. This seemed suitable for my study's objective insofar as it allows for creating a broader picture of cli-fi reading experiences with regard to what aspects emerge when cli-fi readers address their perceived (non)agency in relation to climate change and which particular aspects of cli-fi were (not)helping. Further, I used Thematic analysis as an inductive method, driving codes and themes from the interviews themselves (Braun & Clarke, 2012).

When conducting my analysis, I followed the main steps of Thematic analysis as suggested by Braun and Clarke (2012), including a process of constant revision. Overall, I started by reading the prepared interview transcripts multiple times and took notes to become familiar with the data and already detect contents that are relevant to my study objective. In fact, relevant extracts yielded contents about a) readers constructing themselves as (not) experiencing or acting in relation to climate change and b) readers expressing their experience with as well as the perceived influence of climate fiction. Subsequently, I scanned the data for

relevant excerpts and generated initial codes. In this context, I coded in two directions. I first aimed to code the data for the different ways participants constructed climate change directed (non)agency in relation to climate fiction. Here, I detected non-agency in the data when participants talked about not wanting or being able to mitigate climate change. Additionally, I also aimed to code the data for the different cli-fi reading experience aspects that participants mentioned in this context as helpful or not. With regard to my first research question, my basic unit of analysis was therefore a specific way of presenting climate change directed (non)agency that emerged in the context of cli-fi. With regard to my second research question, my basic unit of analysis was a specific way of presenting ones reading experience with climate fiction.

  To first elaborate on the analysis the first research question concerning (non)agency, these units were mostly whole sentences or sentence fragments. The smallest unit of analysis consisted of a subject and predicate. For instance: "We could do." This discursive position, or in other word this way of positioning oneself on the topic of climate change in the conversation, I would have coded with "we all (need to) do something". In case this position was constructed within a longer sentence, in which the structure added something to the meaning, I coded this longer sentence. For example: "It didn't really give me hope that there was still something we could do." This position, I would have coded with "climate change cannot be stopped (by humans)". Since the interviewees often constructed their sense of (non)agency in more than one sentence, I coded many consecutive sentences with the similar code. Further, I constantly kept modifying the codes throughout this systematic process. Next, I generated themes from the initial codes. Here, themes refer to something that relates to the research question and represents some pattern or meaning within the interviews. For doing so, I clustered together the existing codes that appeared to share some unifying feature, so that they described a coherent and meaningful pattern occurring in the data. In some extracts, participants constructed a theme through repeating similar expressions, in which case I coded

it with the same code. However, in other cases, one extract of a theme included more than one code. Below is an example of an extract that displays one theme, but involves two different codes: "I (can/ need to) do something" and "specific behaviours":

> It makes me sometimes a little bit afraid that this could really happen… And otherwise, I'm attentive. And then I would say: "Oh, this is really I've never thought about, but maybe I can do something for this to... I don't know, I have a balcony. Maybe I could change something there... I can grow flowers there, which bees need or something you know…".

The extract above represents the theme "Individual agency", where the core meaning was that climate change can be mitigated on an individual level.

To further elaborate on the analysis to my second research question, I additionally coded the extracts about agency for specific cli-fi reading experience aspects that participants presented as helpful or not in terms of agency. Here as well, the units were mostly whole sentences or sentence fragments. The smallest unit of analysis consisted of a subject, predicate and object. For example: "It raised awareness." This short sentence, I would have coded with "becoming aware and understanding importance of natural systems". Sometimes, in longer sentences, the structure also added something to the meaning, in which cases I again coded the longer sentence. For instance: "It's just a reminder, it's a more emotional reminder than to read it in a non-fiction way.". This sentence, I would have coded with "experiencing (negative) emotions". Again, the interviewees often constructed the influencing aspects of their cli-fi reading experience in more than one sentence, which is why I coded many consecutive sentences with the similar code. Further, again one extract sometimes included more than just one code. For instance, a single (non)agency theme was sometimes constructed as being supported or not by two different cli-fi aspects. Taken again the earlier extract from above:

It makes me sometimes a little bit afraid that this could really happen… And

otherwise, I'm attentive. And then I would say: "Oh, this is really I've never thought

about, but maybe I can do something for this to... I don't know, I have a balcony.

Maybe I could change something there... I can grow flowers there, which bees need or

something you know…".

Here, the participant also indicated which cli-fi aspects were supporting their

individual agency. Thus, I additionally coded this extract with two cli-fi reading experience

related codes: "experiencing (negative) emotions" and "becoming aware and understanding

importance of natural systems". Reversely, people sometimes also constructed two different

agency themes in negotiation with a single cli-fi reading experience aspect. For instance:

It simply raised awareness for more opportunities in the sense that because awareness

was raised, I naturally got a new scope for action. I was thinking about what can I do?

I do think that there should be more climate fiction because that could make even more

people aware of the situation we're living in now, and how it's so essential that we all

need to start acting and making decisions that have a more positive long-term impact.

In both cases, I coded the extracts with "becoming aware and understanding

importance of natural systems" with regard to the expressed cli-fi reading experience aspect,

however in the light of the respective discursive agency position. Thus, the first extract was

additionally coded with "I (can/ need to) do something" and therefore belonged to the

"Individual agency" theme, whereas the second extract was additionally coded with "we all

(can/ need to) do something (together)" and thereby belonged to another agency theme,

namely "Collective agency", which refers to individuals being able to tackle climate change

together.

As last steps of the analysis, I reviewed and modified the different agency themes by

taking into account the already coded data and whole data set and generated suitable names

and definitions. Additionally, I also tried to find overarching descriptions for the different cli-fi reading experience aspects that were mentioned by the participants and categorized them as either "enhancing" or "tempering". In practice, I categorized a cli-fi reading experience aspect as enhancing when participants mentioned it as having been supportive to their climate related sense of agency. Reversely, I categorized a cli-fi reading experience aspect as tempering in case participants constructed it as being influential in the context of non-agency.

Reliability and validity in this study, or trustworthiness (Guba & Lincoln, 1985), is drawn from a) openly discussing the analytical process, b) following a process of constant revision by triangulating the data with previous studies on agency and efficacy and consensus meetings with my supervisors, and c) reaching data saturation by scanning and including interviews from collaborating students until no new information was discovered.

Results

Results consist of 6 agency themes that display how cli-fi readers expressed different senses of (non)agency (see Table 1) and how they perceived these to be supported or not by different reading experience aspects of climate fiction (see Table 2). A variety of (non)agency responses appeared throughout each interview. In fact, each participant constructed the supportive or not supportive role of cli-fi on their perceived (non)agency in relation to climate change with more than one theme during their interview and combined the themes in various ways. Thus, results illustrate how readers of climate fiction display different kinds of (non)agencies as emerging from different reading experience aspects of climate fiction novels.

Overall, participants constructed their (non)agency either on an individual level, thereby expressing how they as an individual feel, think and act with regard to climate change, or on a collective level, thereby referring to society as a whole. In Table 1, the different themes are hierarchically listed from agency to non-agency, starting with the (non)agencies that were constructed on an individual level (*Individual agency, Experiential*

individual agency, Reflective individual agency, Paralyzed individual agency) and later listing

the (non)agencies that were constructed on a collective level (*Collective agency, Limited*

collective agency). The frequencies in Table 1 refer to in how many out of the 17 interviews

the theme did occur. As most common theme, as can be seen in Table 1, I identified

"Individual agency", followed by "Collective agency", "Limited collective agency" and

"Paralyzed individual agency". In the following sections, I will provide a short description for

each (non)agency theme that I found during my analysis and an example extract of how

participants thematized each of these being supported or not by specific aspects of climate

fiction. The different sections for each theme are structured in the same order as in Table 1.

Besides, I slightly modified the extracts to ensure anonymity and readability. Participants are

referred to with pseudonyms, while the letter "I" refers to the interviewer.

Table 1

Themes of climate change (non)agency expressed in the context of climate fiction reading

Agency Theme	Definition	Codes	Number of interviewees expressing agency N (=17)
1. Individual	an individual's willingness and capacity to mitigate climate change	- I (can/ need to) do something - specific behaviours	11
2. Experiential individual	an individual's experience of the environment and climate change and its effects	- recognizing effects of climate change in one's environment - consciously perceiving the environment	5
3. Reflective individual	an individual's willingness to ponder and learn about climate change	- desire to learn and read about climate change - interest in topic of climate change	4
4. Paralyzed individual	an individual's sense of complete loss of agency	- being helpless - being hopeless	6
5. Collective	belief that society as a whole needs to act, that people need to work together to mitigate climate change	- people (can/ need to) do something - we all (can/ need to) do something (together)	7

6. Limited collective	belief that humans are not willing or able to influence climate change	- climate change cannot be stopped (by humans) - insecurity about what to do - people are and stay inactive and ignorant	6

Table 2

Perceived role of cli-fi reading experience aspects in (not) supporting climate change agency

Perceived influence on agency	Cli-fi reading experience aspect	Codes
Enhancing	1. Awareness creation through depicted future scenarios and illustration of present issues	- becoming aware and understanding importance of natural systems
	2. Emotional involvement through apocalyptic future presentations	- experiencing (negative) emotions
	3. Perspective change through identification with characters	- feeling with characters - observing actions (of individuals like me)
	4. Knowledge delivery through real-world information incorporated into storyline	- learning something new - checking background facts
Tempering	1. Emotional involvement through apocalyptic future presentations	- experiencing negative emotions
	2. Lack of emotional involvement through flat characters and storyline	- being bored - not feeling with characters
	3. Lack of displayed solutions	- lack of inspiration for opportunities to mitigate climate change

Individual agency

The participants mentioned that they see reading cli-fi as helpful in supporting their individual agency. With individual agency, it is meant that participants presented themselves as willing and able to mitigate climate change and as having the power to become engaged on an individual level (see Table 1). A similar discourse focusing on the individual has also been found in previous research (Robison, 2019; Toivonen, 2022). To illustrate, some of the participants expressed that cli-fi promoted concrete changes in actions. Below, "Birgit" (57 years old) briefly responds to the question whether cli-fi has caused any concrete behavioural

changes, by describing her individual actions with regard to climate change after having read

"The History of Bees":

> Birgit: Yes, so after reading the second book I actually bought an insect hotel. And I
> consciously bought several plants for my garden that are bee-friendly. I think that's not
> much but yes that is what I did as a consequence.

In Birgit's example, reading a cli-fi book about bees seems to have had a direct impact on her pro-environmental actions, as she designed her garden in a more insect friendly manner. Overall, four other participants mentioned to have experienced a concrete behavioural change after reading. They mentioned for example that they stopped eating meat or limited their water usage through stopping the water while shampooing their hair. Nevertheless, some participants indicated that their behavioural changes have decreased after a while so that they for example started eating meat again.

Throughout the interviews, readers indicated four different reading experience aspects of climate-fiction to play a role in influencing their individual agency perception. More specifically, they explained that cli-fi supported their individual agency through an emotional involvement and awareness that were both facilitated by the depicted apocalyptic future scenarios, through a perspective change resulting from an identification with the characters and knowledge delivery through the incorporation of real-world information into the fictional storyline (see Table 2). In the following, I will elaborate on how participants constructed their sense of individual agency based on the indirect influence of emotions, which were evoked by the apocalyptic future scenarios, since it was one of the most prevalent aspects that appeared throughout the interviews.

Below, "Lilli" (60 years old) demonstrates how reading cli-fi, including "The History of Bees" and "The End of the Ocean", made her emotionally involved with the story, which in return convinced her of the importance to do more as an individual:

I: Do you think that, uh, climate fiction impacts how you think and act towards climate change?

Lilli: Yes, because it's just a reminder because it's a, it's a more emotional reminder than to read it in a non-fiction way. I read it in the paper or online, just the facts. They don't go into me so deeply. But when I watched the film or when I read climate fiction, it's more emotional and it's for me, it's an emotional reminder: OK, this is a point and this is a very important issue and I should stick to it and try to work with this.

In Lilli's example, she talks about cli-fi serving as an "emotional reminder", which seems to reach her more than pure factual information delivery. It becomes clear that the emotions that are evoked by the fictional storyline are touching her to some extent, which in return reminds her of the importance to not only get involved with the topic of climate change, but to also recognize the phenomenon as important and problematic in the first place. Apart from Lilli, there were six other participants who displayed that the books evoked certain emotions, including anxiety, sadness and guilt, and that each of these emotions impacted their perception that it is important to act as an individual to mitigate climate change. Reversely, two other participants also mentioned that reading climate fiction did not support their individual agency because they lacked emotional involvement while reading. In this context, they explained that the stories were boring and that characters were "flat".

Experiential individual agency

Participants mentioned that reading climate fiction supported their experiential individual agency (see Table 1). The core meaning of this theme is that individuals consciously perceive what is happening in their environment. Thereby, they sometimes also directly observe and experience climate change and its consequences. A similar theme of "experiential agency" has also been found in past research already (Toivonen, 2022).

Throughout the interviews, participants expressed that cli-fi supported their sense of experiential individual agency through the awareness that was created by illustrating present issues or more concrete, by an inclusion of real-world information about natural systems in the storyline (see Table 2). In "Nadja's" (41 years old) example below, in which she discusses "The History of Bees", she explains that awareness through the book led to her experiencing a concrete attitudinal change in relation to the environment:

> I: Has reading climate fiction influenced your feelings with regards to climate change?
>
> Nadja: Yes, 'cause as I said before, I never thought about the bees… that they don't have places where they can grow and live, because of the monoculture we practice at the farm land. Uhm... They die, but I've never thought about this… I mean… the people tell you this and you say yeah, sure, but you still don't think about this, really. And after reading that book, I thought about "yes, when I was driving by car in summer 25 years ago, there were more insects on my window afterwards." Yes, that's right. Yeah, that's stupid, but it makes you more… I don't know how I should describe… it makes you more aware of the things you have never thought about.

In this example, Nadja portrays herself as a human agent who is actively experiencing climate change consequences in the environment. She shows that she realized a direct change in the insect population when she compared the present with experiences from the past, because the cli-fi book has raised her awareness for the topic. Overall, this experiential individual agency was thematized by four other participants. Apart from Nadja, further participants also mentioned that they perceive their environment differently after reading cli-fi and that they observe natural systems (e.g. the diversity in the bee population) more consciously now, which underlines that cli-fi might have the potential to broaden one's attention and thereby support one's connection with the environment.

Reflective individual agency

Cli-fi readers mentioned that becoming involved with climate fiction supported their reflective individual agency (see Table 1). Here, participants constructed themselves as willing and thinking that it is important to ponder and learn about climate change. A similar theme of reflective agency has also been found by Toivonen (2022).

More specifically, readers indicated that reading climate fiction supported this sense of agency by delivering knowledge through incorporating real-world information into the fictional storyline (see Table 2). Below, Nadja (41 years old) depicts how the concrete information from the book made her interested in further engagement with the respective topic:

> I: And has climate fiction reading has changed anything in your thoughts about climate change?
>
> Nadja: OK. I wouldn't say that it has changed anything about my thoughts about climate change… It's still the same thoughts, but it makes more the focus on it, so I wanna read more about that… for example, in the book "History of Bees" she was talking about Colony collapse disorder. [participant explaining phenomenon] And uh, this is really interesting. I've never heard about that and I think this is really interesting. And this is a topic I would like to follow.

In Nadja's example, in which she discusses "The History of Bees", she displays herself as an agent that becomes involved with the topic of climate change through acquiring new knowledge. She explains how the incorporation of a true background fact she has never heard before, namely "Colony collapse disorder"[8], sparked her interest. She clearly describes that she has learned something new from the fictional storyline and that she is eager to continue becoming involved with the specific climate change related phenomenon. Overall,

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[8] A phenomenon that describes a sudden bee colony death resulting from the majority of worker bees suddenly disappearing (Cox-Foster et al., 2007)

three other participants expressed climate fiction to have supported this willingness to learn

more about climate change through newly acquired knowledge.

Paralyzed individual agency

Readers expressed that they experienced reading cli-fi as an obstacle to their perceived

individual agency, which eventually led to a complete loss of agency, a feeling of complete

hopelessness, as described by e.g. Braidotti (2019) (see Table 1). Overall, this theme

resonates with previous literature indicating apocalyptic scenarios to leave a sense of paralysis

(Cole, 2021; Crist, 2007; Fiskio, 2012; Hinkel et al., 2020)

During the interviews, participants expressed that cli-fi did not support their

individual agency, or rather supported this loss of agency through negative emotions, mostly

an overwhelming feeling of hopelessness that resulted from the apocalyptic future

presentations. In this context, they also illustrated the lack of solutions for tackling the climate

crisis as tempering (see Table 2). Below, "Bella" (55 years old) displays her cli-fi experiences

and how the books left her without any hope:

> I: So the next question is, I would like you to tell something about your experiences of
>
> reading these kinds of books, so how have they made you feel and think?
>
> Bella: Well, they're hopeless they are so gloomy and it's kinda like: 'Oh well you know
>
> there's nothing to be done and we're all doomed.' That's not really motivating. […] If
>
> you have a limited amount of time for reading, why would you want to read something
>
> that doesn't give any hope. And then, if I feel like there is no hope, then I can easily feel
>
> paralyzed and no point trying to do anything.

In Bella's example, in which she discusses her experience with the novels "Memory of

Water", "Lupaus"[9] (the name of the book translates as "The Promise") and "The End of the

Ocean", she explains that the hopeless dystopian stories make her feel like nothing can be

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[9] Finnish novel by Emma Puikkonen, published in 2019 by Werner Söderström Osakeyhtiö

done anyways. She describes that reading cli-fi de-motivated her and that the evoked

hopelessness would make her feel "paralyzed" and not only left without any capacity but also

without any willingness to try mitigating climate change. The theme of feeling paralyzed

through the apocalyptic future illustration of the cli-fi books appeared within five other

interviews. Participants mentioned that they would feel more capable and willing to engage

with climate change if there was more hope and more illustrated pathways or solutions. This

leads to the assumption that some readers seem to seek for more direction and concrete

solutions in terms of dealing with climate change or that they at least want to get the feeling

that there are still chances to do something.

Collective agency

The interviewees mentioned that cli-fi had the power to support a sense of collective

agency (see Table 1). The core meaning of this theme is that individuals are willing and able

to cooperate to tackle climate change together, in a collective manner, which resonates with

previous research on agency (Toivonen, 2022) and efficacy (Bamberg et al., 2015; Chen,

2015; Hornsey et al., 2021; van Zomeren et al., 2013). Overall, this agency sense was

primarily constructed through participants expressing "we" or "people" doing something

together to mitigate climate change.

During the interviews, participants indicated two different aspects of climate-fiction to

play a role in influencing a sense of collective agency. In fact, readers expressed that cli-fi

supported a sense of collective agency through creating awareness and evoking emotions by

portraying apocalyptic future scenarios and possible consequences of climate change (see

Table 2). In the extract below, "Celine" (40 years old) demonstrates how influential she thinks

cli-fi could be in the bigger picture due to its potential to create awareness:

> I: Is there something else that you would like to add about climate fiction reading or
>
> climate change? Anything that we have not yet discussed but you want to say?

Celine: So, I do think that there should be more climate fiction because that could make

even more people aware of the situation we're living in now, and how it's so essential

that we all need to start acting and making decisions that have a more positive long-term

impact.

In this example, Celine, who has read "The History of Bees", "Memory of Water" and

"Sands of Sarasvati"[10], states that cli-fi has the potential to create awareness among more

people. By stating this she shows that not enough people have recognized the urgent danger

that climate change depicts to our world. By talking about "people", she distances herself,

which suggests that she might consider herself as being aware already. She further underlines

how important it is that "we" start to do something about climate change. By including herself

now, she depicts herself as a collective agent, sensing that climate change can be mitigated

through a collective effort. Thus, she generally portrays cli-fi as a tool that creates awareness

and which she thinks matters to have an impact on the consequences. Overall, four other

participants expressed that the created awareness through cli-fi supported a sense of collective

agency.

Limited collective agency

The participants constructed the reading of cli-fi as supporting what I have here called

Limited collective agency (see Table 1), which refers to the perception that humans are not

willing or able to influence climate change. In this context, readers expressed that the climate

crisis will for sure escalate at one point in the future and cannot be stopped anyways or that

people are too ignorant to change anything. A similar theme of "limited agency" has also been

found by Toivonen (2022).

Throughout the interviews, participants expressed this sense of limited collective

agency to be impacted by two aspects of climate fiction. First, interviewees constructed the

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[10] Novel by Risto Isomäki, English version published in 2013 by Into Publishing

lack of displayed solutions as non-supportive. Second, readers also constructed the negative

emotions, mostly an overwhelming feeling of hopelessness that resulted from the apocalyptic

future presentations as tempering (see Table 2). Below "Sina" (21 years old), wo has read

"The History of Bees" and "The End of the Ocean", illustrates her experience with the

dystopian books:

> Sina: I think like after reading the books, I definitely felt like there was no hope there.
>
> Like you think: "OK, this is definitely how it's gonna happen and nobody is gonna care
>
> enough to actually make a change." So, it was more for the worse honestly, than for the
>
> best. Like, it didn't really give me hope that there was still something we could do.

In the example above, Sina displays how the apocalyptic future scenarios left her

without any hope and thereby with a sense that any climate change related action is

meaningless. In this context, she underlines that it made her aware of people being ignorant

towards climate change and that they won't change anyways in the future even when climate

change eventually forces society to its knees. Apart from Sina, three other participants

mentioned this ignorance of people. In fact, one reader specifically explained that in the

storyline, characters are already living at that post-apocalyptic point and still show no

behavioural transformation, thereby just accepting their "fate" and adapting to the

environmental situation as it is. This construction of human agents as being careless implies

reader's pessimistic attitude towards society and thereby also a certain loss of agency.

Overall, this construction of limited collective agency perception being impacted by the

negative emotions evoked through the apocalyptic future scenarios and the limited solution

portrayal, occurred within four further interviews, with participants reporting that there is not

really anything that can be done and that every action would be a waste of effort, because it is

beyond human capacity to stop climate change.

Discussion

In this study, I found 6 themes that display cli-fi readers discursive (non)agency constructions in relation to climate change. In this context, participants expressed 4 reading experience aspects of climate fiction as enhancing and 3 reading experience aspects of climate fiction as tempering their climate related agency sense. In the following sections, I will briefly discuss the main findings in the face of previous literature and make some suggestions to future research as well as to the field of clinical psychology.

Main Findings

Overall, results of this study show a rich variety in climate related (non)agencies that were constructed in the context of climate fiction reading. With regard to viewing (non)agency here as a discursive attribution of a variety of aspects of being-ableness or the lack thereof (Toivonen, 2022), cli-fi readers mostly constructed their (non)agency in terms of "ableness" in this study, so whether they feel able to take climate change related actions (Individual agency, Collective agency) or whether they do not (Paralysed individual agency, Limited collective agency). Only the themes of Experiential and Reflective agency seem to include more aspects of "being", with participants expressing themselves as consciously experiencing their environment and climate change effects as well as actively pondering about the topic. The most frequently expressed agency sense was Individual agency (see Table 1), with participants expressing themselves as willing and able to mitigate climate change after having read climate fiction. This way of emphasizing the potential of individual human agency, depicting the climate crisis as solvable by individual lifestyle management solutions, has been highlighted as a common tendency in Western discourses (Adeney et al., 2020; Siperstein, 2016; Toivonen, 2022). As second most common theme, I identified Collective agency (see Table 1). Here, climate fiction readers constructed themselves as able to tackle climate change together, in a collective manner, which resonates with previous research on agency (Toivonen, 2022) and efficacy (Bamberg et al., 2015; Chen, 2015; Hornsey et al., 2021; van Zomeren et al., 2013). In fact, this theme seems to counteract the aforementioned

tendency of portraying individual actions as being powerful, constructing climate change to be only solvable if all people take climate mitigation actions.

Overall, participants expressed their (non)agencies either on an individual or collective level throughout the interviews (see Table 1), which is in line with the central differentiation between individual and collective or group efficacy that has already been made by previous research on efficacy (Bamberg et al., 2015; Chen, 2015; Hornsey et al., 2021; van Zomeren et al., 2013). What becomes clear however, is that most participants expressed their agency in terms of how they feel, think and act as an individual in relation to climate change, which might be attributed to the highly present individualism in our Western culture (Lim, 2016; Oyserman, 2006).

What stood out was that readers sometimes constructed different (non)agency themes in relation to a single cli-fi reading experience aspect and vice versa. To give an example, participants often expressed the influence of emotions resulting from the apocalyptic future scenarios (see Table 2). In some cases, this cli-fi reading experience aspect was described as leading to the perception that an individual, or people in general, can and need to take climate change mitigation actions. In other cases, however, people started to experience a complete loss of agency, a feeling like there is nothing they could do. Reversely, the theme of individual agency for example was expressed as being supported or tempered by 5 different reading experience aspects of climate fiction. Overall, various or seemingly incompatible agency constructions sometimes even occurred within a single interview or response. This finding of intrapersonal conflicting agency positions resonates with previous research on agency (Toivonen, 2022) and is in line with the assumption that many people have contradictory feelings and thoughts about climate change in general (Hoggett, 2019). Thus, given the variety in and even paradoxical agency constructions plus the varying perceptions on the (non)supportive role of different cli-fi reading experience aspects found in this thesis, it seems that the topic of climate change per se already triggers much uncertainty in us humans

and that reading climate-fiction might even add something on top, with something new emerging from that. In fact, participants often expressed their (non)agency to have established more or even transformed to a certain extent after having engaged with climate fiction. For instance, some participants who indicated to have engaged in individual climate mitigation actions before reading, still constructed the dystopian novels to leave a sense of paralysis.

Besides, some participants reported that reading climate fiction promoted concrete behavioral changes, which seems to portray an important finding in the context of theorizing literature and the scarce empirical research on climate fiction specifically. To elaborate, participants reported to have designed their gardens in a more insect-friendly manner (e.g. buying an insect hotel), paid more attention to their water consumption (e.g. turning of the water while shampooing the hair) and stopped eating meat. This finding resonates with previous research on narratives in general, claiming that narratives might play a decisive role in motivating climate action (Chapman et al., 2017; Moezzi et al., 2017), because they define the problem of climate change and link it to the audience's social reality by indicating causes, possible solutions as well as moral responsibilities (Hinkel et al., 2020; Fløttum & Gjerstad, 2016). Further, this finding is also in line with fear appeal theory, which assumes that individuals can be motivated to engage in behavioral change through the portrayal of threat messages (Williams, 2012). Thus, it seems that the threat messages displayed in the cli-fi books were helpful to some participants in that they were convinced of the necessity and effectiveness of a behavioral change to tackle climate change (Tannenbaum et al., 2015; Williams, 2012). Nevertheless, it has to be noted that some readers still indicated these concrete actions to diminish after a while, which resonates with findings from an empirical study conducted by Schneider-Mayerson (2018), showing that climate fiction impacts on values might swiftly decrease over time.

In contrast, cli-fi readers also constructed themselves or society as a whole as being limited or even paralyzed in terms of climate change. In this context, participants displayed

that the dystopian books left them with a feeling of hopelessness and helplessness and thereby

tempered them in their perception of being able to mitigate climate change. They further

noted that they missed inspirations and a more solution-focused approach that could provide

concreter tools for tackling climate change. This finding resonates with the assumption that

apocalyptic narratives might portray an obstacle to human agency to operate (Cassegård

&Thöm, 2018; Cole, 2021; Crist, 2007; Fiskio, 2012; Hinkel et al., 2020; Toivonen, 2022)

and that simply showing negative climate change impacts can be counterproductive in that it

can cause people to take distance, struggling to understand how they could do anything about

climate change (O'Neill et al., 2013). Connecting this finding again with fear appeal theory, it

assumes that a high threat message can also be counterproductive in that it leads to an

individual employing defence mechanisms and therefore avoiding or ignoring the message in

the first place (Williams, 2012). In fact, according to Williams (2012), fear appeals are only

effective if an individual considers a certain change in their behavior as effective in reducing

the posed threat. Thus, it seems that for some people, dystopian cli-fi books might even

portray an obstacle to their perceived agency, as these eliminate any perceived option for

possible changes, thereby strengthening human failure to imagine solution pathways to a

sustainable future (Milkoreit, 2017).

        Finally, it became clear during the analysis process that some participants claimed that

climate fiction did not influence their sense of agency, which seemed to be due to them

having a strongly cemented sense of agency prior to the reading of cli-fi. More specifically,

participants who constructed themselves as having been greatly involved with the topic of

climate change before reading already, indicated to be less or not at all influenced by climate

fiction. In fact, these interviewees explained that reading climate fiction did not add to their

sense of agency, because they already felt capable of mitigating climate change and greatly

engaged in pro-environmental behaviours (e.g. by belonging to the Green party).

Nevertheless, it needs to be noted that the interview context of this study left much room for

"social desirability" so that participants might have answered to the questions in a way that would have put them in a more positive light. In line with this critical note, previous literature suggests that some people have a strong environmental identity, meaning that they hold a strong sense of connection to the natural environment (Clayton, 2003). It might therefore be assumed that some of the participants in this study indeed held such a strong environmental identity, and that they could therefore have experienced difficulties with showing that they are still suggestible. In fact, humans generally have a strong desire for being seen as consistent, as it allows to remain a positive self-concept (Cialdini & Trost, 1998). Thus, with regard to the participants of this study, a member of the Green party might appear as inconsistent if they admitted that reading a single book about climate change would have the potential to influence them, which might have portrayed a threat to the maintenance of their positive self-concept.

Limitations and Suggestions

Still, the aforementioned findings need to be viewed in the light of some further limitations. To elaborate, notable limitations to this research were its qualitative design and the small sample size, both limiting the generalizability of the findings. Additionally, since this is the first study on how people discursively construct their agency in the context of climate fiction books, further work is needed to investigate whether similar agency themes as well as the role of the same cli-fi reading experience aspects would emerge within this context. Here, it is important to note that in these interviews, there was not much variety in the discussed cli-fi books. In fact, nine of out of the seventeen participants read "The History of Bees" and included the book to a large extent in the evaluation process of their cli-fi reading experiences. In 2017, "The History of Bees" was for a few months number 1 on the bestseller-list in Germany (Hennig, 2021), which might explain why this book was so commonly mentioned. As a further threat to the generalizability of the findings, there was also not a large variety in participants' sociodemographic characteristics, especially in terms of

their educational background. To elaborate, all participants had a rather high educational level, which is why further research should investigate how people from different educational backgrounds construct climate change agency in negotiation with climate-fiction. Since many participants assumed the hopeless dystopian characteristic of many cli-fi books to limit their perceived agency, another potential research topic might be to study how people respond to more utopian or solution-focused cli-fi novels, to grasp a wider understanding of whether cli-fi can work as a tool and what it can do and for whom. For example, how could utopian cli-fi novels support people in their climate related agencies or feelings and whom do they reach? Is there a difference among younger and older people or people who have a strong environmental identity and engage a lot with the topic of climate change versus people who do not? Finally, further research is needed to evaluate whether and how climate-fiction can indeed promote pro-environmental actions as suggested by the findings of this study. As a concrete suggestion, this specific topic might be investigated in form of a mixed-methods study, in which specific behaviors resulting from a negotiation with climate fiction are explored first by means of interviews and later measured by a quantitative survey with follow up to measure whether these behaviours persist over time.

Taking a more clinical perspective, bibliotherapy, which makes use of reading to achieve effective changes in an individual and promote personality growth and development (Lenkowsky, 1987), has been shown already to decrease anxiety and increase resilience (Sharma et al., 2014). Since studies have found that the topic of climate change impacts people's mental health in terms of anxiety and depression (Bourque & Cunsolo Willox, 2014; Padhy et al., 2015; Phikala, 2019), scholars in the context of bibliotherapy have taken first attempts of incorporating fiction to support people in dealing with the topic of climate change and associated difficulties in their mental wellbeing (Rudd et al., 2020). In her recently published book, Wakeman (2022) argues that cli-fi - in combination with bibliotherapy programs - might have the potential to alleviate climate anxiety among younger adults. As an

important aspect, Wakeman (2022) mentions the positive perspective of cli-fi to be used in this context. Based on the findings of this study, I agree that perhaps utopian cli-fi novels, which show a more solution-focused pathway towards dealing with the challenge of climate change might effectively work in this context, as they might provide patients with a sense for a more positive future and possibilities, and thereby set the building block for creating hope as argued already in a previous book by Hintz & Ostry (2013), eventually leaving more space for agency to operate. In fact, findings of this study indicate that the portrayal of apocalyptic future scenarios often leaves little room for human agency to operate, even working as a trigger for negative feelings to be evoked, including anxiety, guilt and hopelessness. This in return seems to leave people with a sense of helplessness and lack of motivation, which might even increase climate anxiety. Thus, in the light of this research, I suggest that using dystopian cli-fi novels in the context of bibliotherapy to treat climate anxiety might indeed be counterproductive. However, these are only suggestions based on the findings of this single study, which is why further empirical work is needed to understand the potential of cli-fi in the clinical setting.

Conclusions

Overall, this study has underlined the variability of climate related (non)agency constructions arising from a negotiation with climate fiction reading and that readers sometimes constructed different (non)agency themes in negotiation with a single cli-fi reading experience aspect and vice versa. However, findings still suggest contradictory perceptions on whether cli-fi is supportive or not in terms of climate change agency, with some readers being left with a limited or even complete loss of agency sense, whereas other readers constructed their reading experience as especially supporting their perception of being able to individually or collectively mitigate climate change, even stressing the occurrence of concrete behavioral changes after reading. Thus, cli-fi seems to have a variety of functions for its readers and based on the results of this study, readers also seem to be drawing from these functions and

more or less use cli-fi to meet their psychological needs in terms of agency. Still, the questions of what it can do exactly and for whom and whether cli-fi could really serve as a tool to support people in tackling climate change, both remain a subject to future research.

To conclude, readers' constructed impacts of climate fiction seem to be twofold based on the findings of this study. Whereas some people perceived the books as supporting their climate related agency sense, others perceived the books as an impediment, with sometimes a single participant even stating both. The notion of agency therefore appears complex and multi-faceted and previous assumptions about the impact of climate fiction seem overly simplistic in the light of this research.

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Appendix A – Information Sheet Study

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

Appendix B – Informed Consent

UNIVERSITY OF TWENTE.

FROM:	DATE	PAGE
	24-2-2022	42 of 44
	OUR REFERENCE	

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.

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

Appendix C – Interview Guide

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!