FutureNarratives: Using the future self to create personalized narratives to inspire climate action

Vere Vreeswijk
Department of Industrial Design, Eindhoven University of Technology
Eindhoven, The Netherlands
v.vreeswijk@student.tue.nl

ABSTRACT
To alleviate the negative effects of global climate change, it should become more personally relevant for the public. An opportunity to research the personal relevance was by supporting people in imagining their future self of 2038 and providing a scenario where the future self lives with climate change. Mixed-method research was conducted with 11 participants from the Netherlands who constructed a future self and read a story based on their future self in an interactive research probe. The research found that the perceived personal relevance was affected and discovered a direct link with risk perception. The exploratory nature of this research provides opportunities for future research on how global climate change can become more relevant for the public by creating a future self.

Author Keywords
Climate change; future self; willingness to act; behaviour change; storytelling

INTRODUCTION

The negative effects of global climate change (GCC) are already noticeable. GCC is not a problem for the future but a risk for the societies of the present. However, a large part of society perceives GCC not as alarming or as a distant threat [18]. The perception of climate action can be reduced by local conditions causing an optimism bias [18].

Why would one invest time in changing their lifestyle for a problem that cannot be seen while focusing on daily priorities [18, 5]. However, in the future, it might become a daily priority. What if people could start imagining how today's problems will affect their life in 15 years? Will that make scenarios more relevant for people?

This paper discusses the exploratory research to discover the effect of creating a future self on the perceived personal relevance on climate change scenarios. The research is positioned in the intersection of three fields (Figure 1) which will be elaborated on in the next section.

Background

Climate change

Global climate change is a natural process of shifting global temperature and weather patterns [13]. However, human activity has affected this natural process unquestionably [8]. Scientists often tell the world that we need to start taking action before the world faces serious problems. The timeframe for taking action is rapidly becoming smaller, and the risk of having an unsecured future for all is coming closer [8]. The message of 'act now' has been broadcasted for many years. However, a shift in our behaviour has not been made yet, and people remain unsustainable [18].

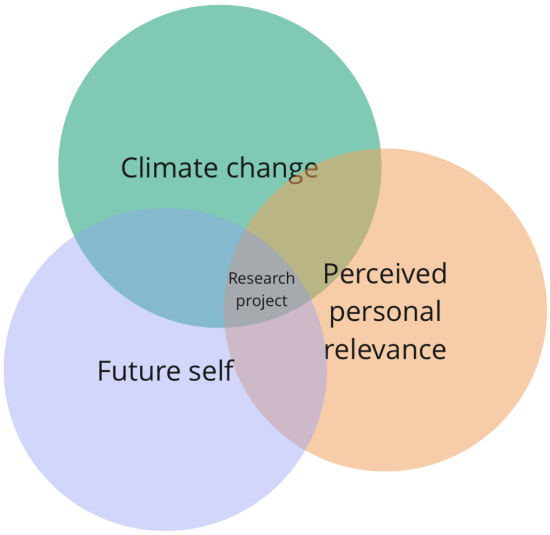


Figure 1: Theoretical areas of this project

People often struggle with messages about GCC because they are often scientific and on a global scale [16] or are perceived as a distant future and miss the day-to-day relevance [18]. These factors contribute to low personal relevance in GCC scenarios. It has been an issue for climate scientists, policymakers, and other organisations to engage the public in global climate change issues [18].

Perceived personal relevance

Individual engagement in global climate change can increase motivation for necessary changes in behaviour [18]. Engagement includes caring, motivation, and willingness to act, while GCC-related events are often far from the individual's immediate experience causing a psychological distance [18]. For effective attitude change, social-psychological theories mention the importance of personal relevance [18]. Perceived personal relevance (PPR) is described as a personal principle that specific behaviour is

related to a person's interest and is aligned with the person's lifestyle actions [21]. When an action is personally relevant, people have a higher motivation to engage in the action [21, 18].

Perceived personal relevance influences people's attitudes and behavioural intentions [10]. What is called attitude by Kang et al. [10] is similar to risk perception. Risk perception can be measured by (i) the fact that global climate change is occurring, (ii) the consequences are negative and (iii) knowledge of the causes [5, 6]

Behavioural intention is similar to the term willingness to act. Willingness is also related to perceived personal relevance [6]. Self-efficacy is important in evaluating willingness to act and risk perception [6, 5]. Some individuals believe that their efforts will help alleviate the negative consequences of climate change [5]. This is called cooperative self-efficacy, which focuses on individual cooperative behaviour that can affect the results of a larger group [5].

In Figure 2, an overview is provided of the determinants for PPR.

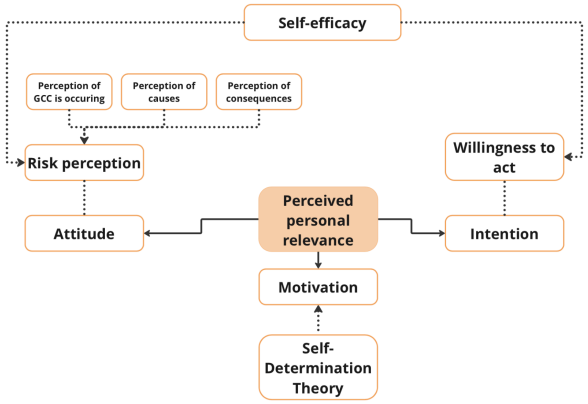


Figure 2: Framework for perceived personal relevance. Filled line illustrates influence, dotted line illustrates predictors of the determinants.

Future self

The future self is a phenomenon in psychology. There is a difference between the present you and the future you. The human decision-making process is conceptualized that over time, there are multiple selves to think of [17]. Intended tasks for the present self often get delayed and shifted to the future self, who will pay the price for our inaction, i.e. we prioritize our current needs over the needs of our future self [19]. The study from Pronin et al. [17] also describes how future selves can be viewed as others. However, this still returns to the same issue because people prioritize their needs over others [17].

Storytelling/design fiction

It is argued that when discussing global climate change, there are too many disastrous stories and a shortage of stories about taking action [23]. Stories can influence pro-environmental behaviour compared to informative narratives [15]. If the story receiver has an empathic connection with the character, the story's plot can open the story receiver's imagination [15]. The theory of story completion argues that to make decisions in a story, people always rely on their own experiences and values to make sense of the decision [12]. Story completion can support people in talking about sensitive or complex topics [12]. Another theory about stories in design is design fiction. Design fiction is a method to use prototypes to change disbelief related to a topic [20].

Related work

There are more and more initiatives to engage people with climate change. For example, the Urban Heat Studio hosted the Heat Resilient Cities Conference 2039 to have people thinking about living in a hotter Berlin [24]. This project is specifically good for translating global climate change more locally. Creating a bridge between local and global is beneficial as global scenarios are harder to engage with [18].

Another example of how people are introduced to possible future worlds is in the interactive audio story of Flash Forward [3]. The story exists out of multiple podcasts. At the end of each podcast, presents a question, and based on the person's answer, you are transferred to another podcast episode.

What the examples illustrate is that storytelling is a method that is already used for climate change. However, there need to be more projects with personal relevance and GCC. This indicates an opportunity to research how the future self can be used concerning PPR and GCC.

DESIGN

The research probe is a digital interactive story accessible via www.verevreeswijk.nl. First, the character Raven asks the participants questions (Figure 3, Appendix A, B) to help to imagine or construct their future selves.

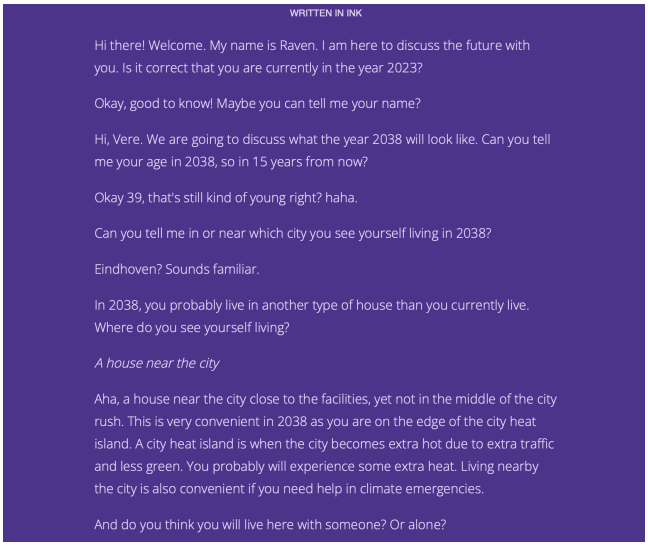


Figure 3: Questions asked by Raven

Once all the questions from Raven are answered, Raven recommends a story about Sam based on the answers given by the participant. The story contains 160 choices and 12.837 words but is not all visible to the participant. The answers from the participant influence the story, e.g., by adding a partner or children in the storyline (Figure 4) who are all gender-neutral for imagination purposes. The general storyline is kept the same for all jobs and projects, so similar events happen in all the stories. However, Sam's actions or tasks differ per job or community project. The story contains ethical dilemmas (Appendix C) to engage the participant and provoke them to think about their action. The story is based on the weather trends of the Dutch institute, such as long periods of rain or drought [11] but is exaggerated to make the story engaging. Some example stories are shown in Appendix D.

```
++++++ [>]
Fixing the problem would take some more time, but it is what the community asks
    from me. But how can I abandon my home {futureself_family
    .family_with_someone: Skylar}{futureself_pet.pet_yes:,
    Tommy}{futureself_children.children_yes: and the children}? But how will the
    community ever accept it if I ruin this? Who will help us out in the future?
    I don't have much time to decide. What shall I do…
-> section_7_general
```

Figure 4: Piece of the code showing alternatives (green text is previous decision made) in the story

To make the design, a flowchart about the storyline was created first (Appendix E). Once a structure was created, coding software was looked for to make the story interactive. Ink was considered as best software as it is accessible and used for game development where decision-making and storytelling play a prominent role [7]. The story was coded (Figure 4) and transferred to the web to make it accessible. The website's colours were altered to a purple theme as purple stands for the future and imagination in colour psychology theories [9].

METHOD

Participants

Participants were all Dutch and between the age of 18 and 25. It was decided to go for Dutch participants as climate change's effects are relatively unnoticeable in the Netherlands. In contrast, Dutch households, on average, have an ecological footprint two or three times as high as the global average [14]. This indicates that there is a lot to gain for Dutch households. The age group was selected because people in this group will help shape the future through their lifestyle and career choices and will be alive in 20238. Eleven people participated in the study, whereas two participated in the pilot.

Study setup

All studies were with one participant and one researcher. The study set-up existed out of a pre-research questionnaire, interaction with the research probe, a post-research questionnaire, and an interview. After a week, the participants were asked a few follow-up questions. Each part of the study will be elaborated below.

Pre- and post-research questionnaire

To measure the effect, it was decided to go for mixed-method research. Two scales were considered for gathering quantitative data on the determinants of PPR. First, the New Environmental Paradigm (NEP) [2] was considered. However, the scale of Thompson and Barton [22] was better at measuring subtle motivation changes [5]. The questions used in this research was the questionnaire from Thompson and Barton [22] modified by Heath and Gifford [5] (Appendix F). All questions were asked with a 5-point Likert scale. The questionnaire was used at the start of the study and after the interaction with the research probe. The topics covered by the questionnaire were beliefs about GCC tested in three sub-topics, self-efficacy and willingness to act.

Research probe

After the pre-research questionnaire, participants continued with the interactive story (Figure 5). Once participants were finished with the story, they filled in the post-research questionnaire.

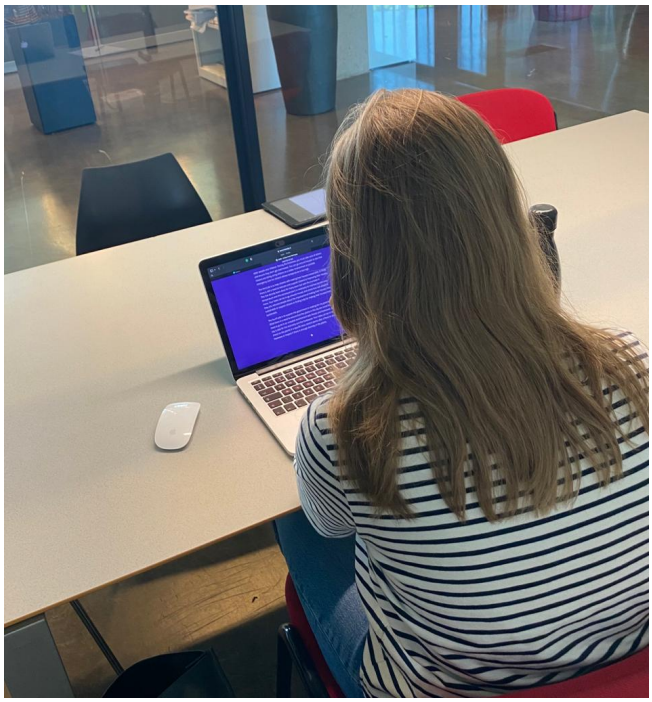


Figure 5: Particpant interacting with the research probe

Interview

The semi-structured interview focused on discovering thoughts and experiences on multiple topics (Appendix G). A part of the interview was related to the Self-Determination Theory (SDT) by Gagné and Deci [4]. The SDT explains that motivation is based on three basic needs: autonomy, competence, and relatedness. The SDT was used to gain a better understanding of the motivation of participants for dealing with climate change.

Post-research questions

The post-research questions (Appendix H) were asked to discover if the study affected participants after their

participation. Answers were allowed to be brief as the intention was to capture participants' thoughts and to keep a low threshold for the participants.

Pilot study

Two participants participated in a pilot study. The purpose of this pilot was to evaluate multiple aspects of the setup:

1. Participants had to read a lot before sharing their thoughts, and staying focused during the study should be easy. It was concluded that the length of the texts was appropriate.
2. It was evaluated that the questionnaire was clear and understandable. Two terms (mitigation and alleviate) needed to be clarified. The definitions of the two terms were ensured to be available during the research.
3. The interview questions were evaluated on their accessibility. One question took time for participants to understand and answer. Therefore, the question was split into two questions.
4. The outcomes of the interview were evaluated.

Overall, the interview provided insights on the topics needed. However, a few questions were asked about their experience with climate change, e.g. 'When did you have to deal with extreme weather? And what did you do?'.

Since there were minimal changes made in the setup after the pilot study, the data collected during the pilot study is included in the results.

RESULTS

In this section, the results of this study will be discussed. Appendix I, J, and K provide a detailed overview of the data used.

Pre- and post-research questionnaire

The quantitative data gathered through the questionnaire was analysed by comparing participants' answers in the pre- and post-research questionnaire. First, the 5-point Likert scale was translated into a numerical scale, making strongly disagree 1 point and strongly agree 5 points. Some questions were asked in a negative tense and therefore had to be changed into a positive tense to align the answers. Per determinant (risk perception, self-efficacy and willingness to act) it was analysed if a participant became more positive, stayed unchanged or became more negative. This was done by taking the average score per section per participant and comparing the score from the pre- with the post-research questionnaire. A positive difference (> 0) was an increase, no difference (= 0) was unchanged, and a negative difference (< 0) was a decrease. As this research uses a mixed method approach, the quantitative data was used to see if there was an effect and the qualitative data was used to explain the effect. Below, the quantitative results per determinant and the *results* on the future self in the qualitative data will be discussed.

Risk perception

In Figure 6, the effects on risk perception are shown. The figure is created by taking the average score of the three questionnaire topics (i) the fact that global climate change is occurring, (ii) the consequences are negative and (iii) knowledge of the causes. Out of 11 participants, eight increased, one unchanged and two decreased in their perception.

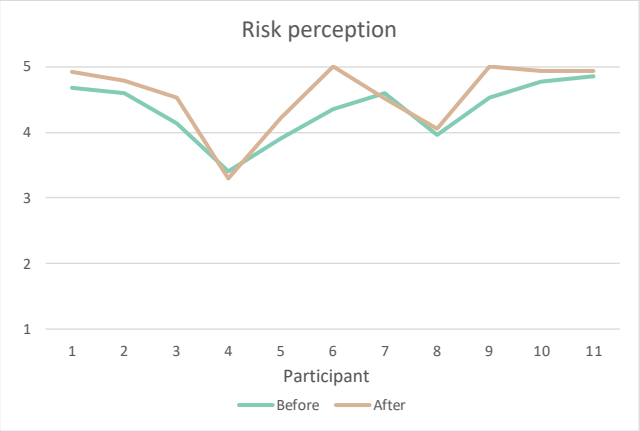


Figure 6: Overview of beliefs in global climate change per participants from the pre- and post-research questionnaire.

Willingness to act

In Figure 7, the effects on willingness to act are shown. Out of 11 participants, five increased, three were unchanged, and three decreased in their perception.

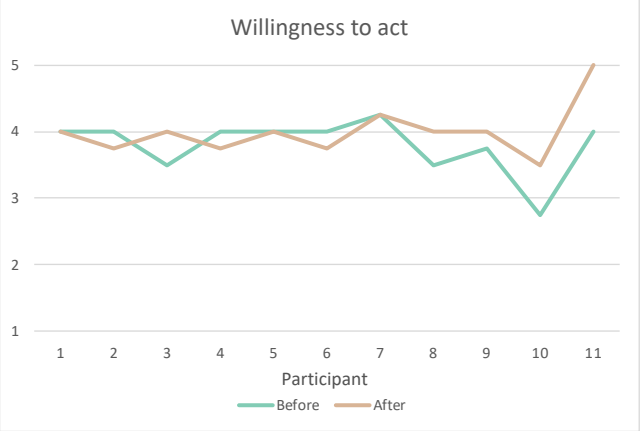


Figure 7: Overview of willingness to act per participants from the pre- and post-research questionnaire.

Self-efficacy

In Figure 8, the effects on self-efficacy are shown. Out of 11 participants, nine increased, two were unchanged, and zero decreased in their perception.

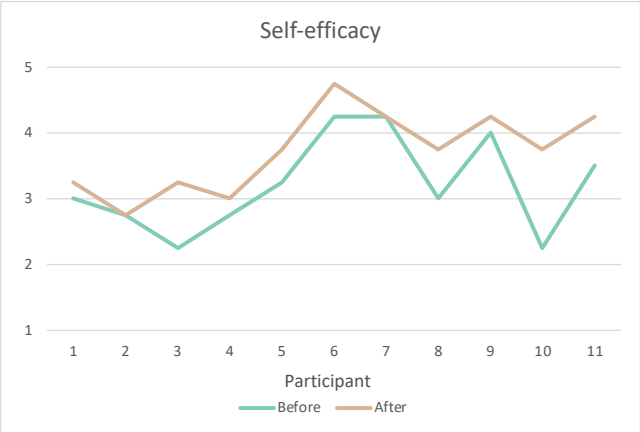


Figure 8: Overview of self-efficacy per participants from the pre- and post-research questionnaire.

The creation of the future self

The qualitative data was deductively analysed [1] on creating the future self concerning risk perception, self-efficacy and willingness to act.

When participants explained their experience with creating their future self, most mentioned topics confirming their risk perception, for example, P10 expressed that she imagined how she could live in her chosen city in 2038 in a GCC-induced scenario. P7 mentioned that he thought the scenario was too extreme and would never become that worse in the Netherlands. In contrast, P2 could imagine that GCC would impact his life. When imagining the world of their future self, a few participants realised that they will not live under the same circumstances as their parents currently do due to GCC. P4 related her future self with her current living situation near the water and could relate less to her future self as she would have expected to see more innovation in her job as a flood fighter.

Self-efficacy was expressed as second most. P3 realised that he was already aware of situations in the scenario and expressed that he could do more. P8 expressed that he could contribute to alleviating the negative effects of GCC via his future job. P2 was interested in his responsibility in the future of climate change and his role.

Willingness to act was not mentioned in relation to the creation of the future self.

The future self in the scenario

The qualitative data was deductively analysed on the future self in the scenario concerning risk perception, self-efficacy and willingness to act.

For the willingness to act, P1 and P8 hoped that the community element would be as strong as in the scenario and that they would like to contribute. P4 expressed being willing to act if the future would be so insecure. The story's dilemma about the breaking window or caring for the children confronted P3. He hoped that there was something he could do to prevent this. Besides, the concrete problems and actions helped him realise how to live with climate change, which P6 also mentioned. P8 also felt optimistic and was considering long-term investments for sustainability once he has the finances for it and considered becoming a volunteer at the fire department. P10 expressed that she knew what she could do better but only sometimes did it. She compared it to eating candy 'you know it is bad, but you still do it'.

The future self in the scenario also influenced the risk perception. P1 realised that the world would be very different in 2038. Living in that world made her sad. P4 assumed that floods will rarely happen in the Netherlands since they only exist because of their water management, and P7 did not believe the flood fighters would come into existence. The world-building in the scenario supported P2 in imagining that GCC will also affect his hometown. The living situation was also a concern for P3, and he found it confronting to think about where to live in the future and under what circumstances. Some participants thought this scenario was too extreme or dystopic and did not see this happening in 2038. However, P6 and P8 related a story element to their own experiences and concluded that GCC is already happening and developing more rapidly than expected. Like P6 and P8, P10 also saw this as a plausible future. P9 saw this as preparation by thinking about what he would do if it would go wrong. P11 felt the scenario was relevant as it was altered to her circumstances.

Self-efficacy was less expressed in the answers of the participants. P6 realised better what she could do if Sam's future became a reality. P8 considered having less children in the future if that would be better. P11 was triggered by the story and evaluated what she would do if she were in the situation.

Motivation

The quantitative data did not measure motivation but was only discussed in the interview. Questions related to the SDT [4] were deductively analysed with each SDT construct as a theme. An inductive analysis was done in every theme to find clusters (Appendix J).

Competence

Four clusters were found within the theme of competence. Most participants felt competent to change their behaviour, e.g., by creating awareness in their environment (P11). However, among others, P1 mentioned that their role in climate change would depend on what the government would do first.

Relatedness

Some participants reflected on their role and felt most effective by inspiring their environment. Another cluster is about communities. P1 mentioned that they hope to live in a community if the scenario becomes a reality.

Autonomy

Within autonomy, two clusters were defined. First, freedom was important for a few participants. P5 expressed that there should be enough room to decide how you want to contribute to GCC. Second, the participants expressed that governmental institutes or other organisations should take action first before they could make an impact.

Post-questions

Most participants expressed that they thought about the future after the study. However, this was often unrelated to climate change and focused on work and living situations. Almost all participants did not change anything in their behaviour.

Meta-analysis

This section of the results is based on the observations during the interview. These are researchers' observations on the nature of participants' reactions and way of answering the questions.

Firstly, most participants described how the scenario made them feel and were able to express this during the interview. They used story examples and related this to their current lifestyle. Moreover, some participants answered a question by saying something they could change. While answering another question, the same participant sometimes ended their statement reflecting on what they said earlier. For example, P11 expressed in one question that she could start eating less meat. While answering another question, she concluded with, 'yes, maybe I should really reduce my meat consumption' even though this was unrelated to the question she was answering. A similar thing happened to P7, who was answering a question, looked at his plastic water bottle, and concluded that he could do more.

DISCUSSION

The outcomes of this research have provided many insights into the effect of creating a future self on the perceived personal relevance in climate change scenarios. The different constructs that make perceived personal relevance and the connection to the creation of the future self and future self in the scenario will be discussed.

The effect of the future self

In all three quantitative analyses, there was an effect on the determinants related to perceived personal relevance. However, the quantitative data does not show what causes this effect and what the effect is. The effect is analysed in two separate sections, the creation of the future self and the future self in a scenario. Per determinant, it will be discussed if it is related to the effect on PPR.

Risk perception

Most participants increased their risk perception about global climate change after interacting with the research probe (Figure 6). From the answers related to the creation of the future self, participants also often expressed answers related to risk perception. For example, P7 mentioned that it would never be this worse in the Netherlands. As the scenario is based on Dutch climate trends, this is an interesting observation that other participants also mention. This could indicate that their risk perception about the Netherland is different than globally, i.e., participants feel safer in the Netherlands than they maybe should. The future self in the scenario helped some participants reflect on what this would mean for their future and under what circumstances they might live. There was a distinction between participants who saw this as a possible future and participants who found it extreme.

Risk perception is clearly expressed in the participants' answers on creating and the role in the scenario of the future self. Therefore, it can be argued that the future self causes an effect on risk perception.

Willingness to act

The quantitative results of willingness to act had the most varied participant differences between the questionnaires (Figure 7). The majority changed their willingness to act but not all in the same direction. Scannell and Gifford [18] found that an optimistic framing of GCC messages might be more effective than negatively portrayed messages. This finding shows that even if the message is not entirely optimistic, it can still be effective but might affect each individual differently. Additionally, the framing argument is unrelated to the future self's impact. Negative messages may be effective when combined with the future self.

When looking at the qualitative data, willingness to act was not expressed by the participants when answering questions about the creation of the future self. However, participants often used examples from the scenario related to willingness to act. For example, how P8 started thinking about long-term and sustainable investments.

The creation of the future self in the research probe could have been more expansive in expressing the willingness to act and not inviting participants to think about what they are already doing. This might explain why participants did not mention it in the creation but did mention it in relation to the story. Since only one of the two future self components shows a relation to willingness to act, it could not be claimed that the future self affects willingness to act. However, since participants mention it it could be fruitful to research the effect in the future.

Self-efficacy

Figure 8 shows that almost all participants increased their self-efficacy after the interaction, indicating that there is an effect. When looking at the qualitative data, the effect is expressed, but not strongly.

In both the creation and the role in the scenario of the future self, around three participants expressed self-efficacy through their answers. Of the three determinants, self-efficacy is probably the most difficult to express or to evaluate through the given answers. It could be argued that the future self causes the effect of self-efficacy. However, the argument needs to be supported by more evidence and

should be treated as an opportunity for future research. Motivation

The motivation was analysed using the SDT [4]. In the interview, specific questions related to components of the SDT. From the results, it becomes clear that motivation was affected by the research. Participants answered the questions. However, the answers did not directly link with the future self. Participants often reflected on their current behaviour and speculated on what they could change and why (not). Therefore, many insights related to GCC and motivation were discovered. However, it could not be argued that the future self caused the reflective attitude or participation in the research in general. Motivation may have affected the perceived personal relevance, but no direct link with the future self was found.

Perceived personal relevance

Perceived personal relevance was indirectly measured by different determinants (Figure 9). The PPR influences the determinants. However, if all the determinants are affected, it could be argued that the PPR is also affected. Figures 6, 7, and 8 show that the research probe affects all the determinants and, therefore the perceived personal relevance.

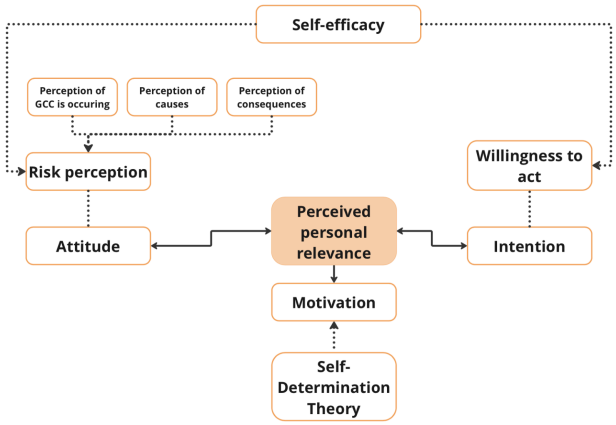


Figure 9: If all determinants are affected, it could be argued that the PPR was affected and therefore the determinants individually were affected.

To discuss the effect of the research probe, all determinants are compared to the qualitative data in previous sections. These sections conclude that the future self is directly linked with risk perception and less directly with the willingness to act and self-efficacy. Therefore, it cannot be argued that the future self directly impacts the perceived personal relevance in climate change scenarios but that the link between willingness to act and self-efficacy should first be further researched.

Limitations

As a reflection on how this research is conducted, trying something new allows for many rich insights. However, this research also has limitations.

First, the research was executed in limited time and so with limited participants. Therefore, the results of this research are not generalisable.

Secondly, as mentioned in the previous section, this research has not clarified the effect on the willingness to act and self-efficacy. It could be argued that it is related to the future self, but further research is necessary first. Therefore, it should also be considered that there are other effects that impacted the results of this research. Possible effects could be the questionnaire which could have influenced participants' mindset, the individual process, which made information processing completely internalised or by having people actively think about GCC.

Thirdly, there was no conceptual bridge between the creation of the future self and the provided scenario. Some participants said they would have liked to have more background information about what happened in those 15 years. The conceptual bridge was also mentioned as expert feedback (M.C.Hebrok, personal communications, 01-06-2023).

Fourthly, this research aimed to discover the effect of creating a future self on the PPR of GCC scenarios. However, the research should have asked the participants if they already thought about their future selves before participating in the research. Some participants expressed this in their answers, but it was not considered in the research as an effect.

Fifthly, the participants were selected on if they acknowledged GCC. Therefore, generalising the results to people who do not acknowledge GCC is impossible.

Lastly, the scenario or story provided to participants probably affected the PPR. This research explored the future self with one scenario. It could be speculated that this story was relevant or new to people and therefore, the future self was also affected. It is worth exploring this method with different stories to isolate the story's effect and learn more about the future self's effect.

Future work

This research was exploratory. Many insights have been gathered (Appendix I, J, K, L) but have yet to be included in the paper as they focused on underlying motivations and reasoning rather than the effect of the future self. However, this research found new opportunities to understand how we can enable people to alleviate the negative consequences of GCC and how they can adapt their behaviour.

First, it is necessary to conduct a study with a similar probe but another story to discover what the influence of the story is on the PPR. This could help clarify how the future self functions concerning GCC.

Secondly, as mentioned, this research gathered insights on participants underlying thoughts and motivations for their behaviour which is currently excluded from this paper. However, it is worth researching how this method could be

used to gather insights into people's future thinking or reasoning in how they view the future. To suggest this could be done by improving the prototype with a reflective question at the end (J. Lowley, personal communications, 01-06-2023) and to start collecting data through the website.

Thirdly, the research was framed in the context of GCC. However, the research probe might work in other contexts. The method has the potential to be used by municipalities to gather citizens' thinking, especially if it is possible to track the decisions made by citizens.

CONCLUSION

The exploratory research project centred around the question of the effect of creating a future self on the perceived personal relevance of climate change scenarios. The PPR was evaluated using motivation, risk perception, willingness to act, and self-efficacy. The research found a strong connection between the future self and risk perception, while other connections were less strong. As the research set-up might have influenced this, it is worth continuing research on this topic as it might open the door to bringing GCC closer to the public. This research contributes knowledge on perceived personal relevance and future selves in the context of global climate change. The most valuable insight in this research is that risk perception is affected when a future self is created and shown in a story. This finding can potentially communicate GCC as alarming to people with an optimism bias as they do not experience GCC yet. The results provide opportunities for future research as there are results that are worth exploring further to improve the perceived personal relevance in global climate change scenarios.

ACKNOWLEDGEMENTS

I would like to thank Dan Lockton for his inspirational coaching throughout this project, the experts who provided feedback on my research probe and the participants for taking the time to participate in this research.

REFERENCES

[1] Jack Caulfield. 2022. Wat is een thematische analyse (thematic analysis)? *Scribbr*. https://www.scribbr.nl/onderzoeksmethoden/thematische-analyse/

[2] Riley E. Dunlap, Kent D. Van Liere, Angela G. Mertig, and Robert Emmet Jones. 2000. New Trends in Measuring Environmental Attitudes: Measuring Endorsement of the New Ecological Paradigm: A Revised NEP Scale. *Journal of Social Issues*, *56*(3), 425–442. https://doi.org/10.1111/0022-4537.00176

[3] Flash Forward. (n.d.). *Vanguard Estates*. https://www.flashforwardpod.com/2022/10/31/welcome-to-vanguard-estates/

[4] Marylène Gagné, and Edward L. Deci. 2005. Self-determination theory and work motivation. *Journal of Organizational Behavior*, *26*(4), 331–362. https://doi.org/10.1002/job.322

[5] Yuko Heath and Robert Gifford. 2006. Free-Market Ideology and Environmental Degradation. *Environment and Behavior*, *38*(1), 48–71. https://doi.org/10.1177/0013916505277998

[6] Carmen M. Hidalgo and Ignacio Pisano. 2010. Determinants of risk perception and willingness to tackle climate change. A pilot study. *Psyecology*, *1*(1), 105–112. https://doi.org/10.1174/217119710790709595

[7] Inky. 2022. *Ink* (0.14.1) [Software]. https://www.inklestudios.com/ink/

[8] IPCC. 2023. AR6 Synthesis Report Climate Change 2023 - Summary for policymakers. In *IPCC*. Intergovernmental Panel on Climate Change. Retrieved June 11, 2023, from https://www.ipcc.ch/report/ar6/syr/downloads/report/IPCC_AR6_SYR_SPM.pdf

[9] ITALIANBARK. 2022. COLORS | The meaning of purple in color psychology. *ITALIANBARK*. Retrieved June 11, 2023, from https://www.italianbark.com/colors-the-meaning-of-purple-in-color-psychology/#:~:text=Furthermore%2C%20purple%20and%20violet%20represent,often%20associated%20with%20these%20worlds.

[10] Jiyun Kang, Chaunlan Liu, C and Sang-Hoon Kim. 2013. Environmentally sustainable textile and apparel consumption: the role of consumer knowledge, perceived consumer effectiveness and perceived personal relevance. *International Journal of Consumer Studies*, *37*(4), 442–452. https://doi.org/10.1111/ijcs.12013

[11] Koninklijk Nederlands Meteologisch Instituut [KNMI]. 2021. *KNMI - KNMI Klimaatsignaal'21*. Retrieved June 11, 2023, from https://www.knmi.nl/kennis-en-datacentrum/achtergrond/knmi-klimaatsignaal-21

[12] Deborah Lupton and Breaking Methods Webinar Series. 2020. *The Story Completion Method* [Video]. YouTube. Retrieved June 12, 2023, from https://www.youtube.com/watch?v=XJO6CltYb0A

[13] Met Office. (n.d.). *What is climate change?* Retrieved June 11, 2023, from https://www.metoffice.gov.uk/weather/climate-change/what-is-climate-change#:~:text=Climate%20change%20is%20the%20long,term%20changes%20to%20the%20climate.

[14] Milieu Centraal. 2023. *Factsheet CO2 voetafdruk huishoudens*. Retrieved June 12, 2023, from https://www.milieucentraal.nl/media/tqojovzu/factsheet-co2-voetafdruk-huishoudens-2023-versie-mei.pdf

[15] Brandi S. Morris, Polymeros Chrysochou, Jacob Dalgaard Christensen, Jacob L. Orquin, Jorge Barraza, Paul J. Zak, and Panagiotis Mitkidis. 2019. Stories vs. facts: triggering emotion and action-taking on climate change. *Climatic Change*, *154*(1–2), 19–36. https://doi.org/10.1007/s10584-019-02425-6

[16] Jose Q. Pinheiro and Alexandra C. De Farias. 2015. In search of a positive framework for communications about Global Climate Change. Positive communication about Global Climate Change / En busca de un encuadre positivo en la comunicación sobre el cambio climático global. Comunicaciones positivas sobre el cambio climático global. *Psyecology*. https://doi.org/10.1080/21711976.2015.1026084

[17] Emily Pronin, Christopher Y. Olivola and Kathleen A. Kennedy. 2007. Doing Unto Future Selves As You Would Do Unto Others: Psychological Distance and Decision Making. *Personality and Social Psychology Bulletin*, *34*(2), 224–236. https://doi.org/10.1177/0146167207310023

[18] Leila Scannell and Robert Gifford. 2013. Personally Relevant Climate Change. *Environment and Behavior*, *45*(1), 60–85. https://doi.org/10.1177/0013916511421196

[19] Fuschia Sirois and Timothy Pychyl. 2013. Procrastination and the Priority of Short-Term Mood Regulation: Consequences for Future Self. *Social and Personality Psychology Compass*, *7*(2), 115–127. https://doi.org/10.1111/spc3.12011

[20] Bruce Sterling and NEXT Conference. 2013. *Bruce Sterling - Fantasy prototypes and real disruption* [Video]. YouTube. Retrieved June 12, 2023, from https://www.youtube.com/watch?v=M7KErICTSHU

[21] Simona Stojanova, Mila Zečević and Barbara Culiberg. 2021. From Words to Deeds: How Do Knowledge, Effectiveness, and Personal Relevance Link Environmental Concern and Buying Behavior? *Journal of Nonprofit & Public Sector Marketing*, 1–25. https://doi.org/10.1080/10495142.2021.1953671

[22] Suzanne C. Gagnon Thompson and Michelle A. Barton. 1994. Ecocentric and Anthropocentric Attitudes Toward the Environment. *Journal of Environmental Psychology*, *14*, 149–157.

[23] Ucl. (2023, March 31). *Climate Stories*. Climate Action Unit. https://www.ucl.ac.uk/climate-action-unit/climate-stories

[24] Urban Heat Studio. (n.d.). *Heat Resilient Cities Conference 2039*. Heatresilientcities. Retrieved June 11, 2023, from https://www.heatresilientcities.com

APPENDICES

A. Questions by Raven

```
=== intro ===
Hi there! Welcome. My name is Raven. I am here to discuss the future with you. Is it correct that you
    are currently in the year 2023?
    + <em>[Yes]</em>
    -> introduction
    + <em>[No]</em>
    Oh, that is strange. Let's pretend it is 2023.
    ++ <em>[Okay]</em>
    -> introduction

= introduction
 Okay, good to know! Maybe you can tell me your name?
    + <em>[Yes]</em>
    Hi, {get_name()}. We are going to discuss what the year 2038 will look like. Can you tell me your
        age in 2038, so in 15 years from now?
    ++ <em>[Yes]</em>
    Okay {get_age()}, that's still kind of young right? haha.
    Can you tell me in or near which city you see yourself living in 2038?
    +++ <em> [Yes]</em>
    {get_city()}? Sounds familiar.

    -> futureself_living_environment

=== futureself_living_environment ===
In 2038, you probably live in another type of house than you currently live. Where do you see yourself
    living?
    + (house_far_city) <em>A house far from the city</em>
    Aha, a house far away from the rush of the city. This is in 2038 also convenient as you are far
        away from the city heat islands. A city heat island is when the city becomes extra hot due to
        extra traffic and less green. On the downside, you do live more isolated, maybe. So if you
        need help, you are harder to reach during climate emergencies.
    -> futureself_family
    + (house_near_city)<em>A house near the city</em>
    Aha, a house near the city close to the facilities, yet not in the middle of the city rush. This
        is very convenient in 2038 as you are on the edge of the city heat island. A city heat island
        is when the city becomes extra hot due to extra traffic and less green. You probably will
        experience some extra heat. Living nearby the city is also convenient if you need help in
        climate emergencies.
    -> futureself_family
    + (appartment_in_city)<em>An appartment in the city</em>
    Aha, an apartment in the city close to all the facilities. The only downside is that you are in
        the middle of the city heat island on hotter days. A city heat island is when the city becomes
        extra hot due to extra traffic and less green. However, when a climate emergency happens, you
        are part of a community and close to help.
    -> futureself_family
=== futureself_family ===
And do you think you will live here with someone? Or alone?
    + (family_with_someone) <em>With someone</em>
    How cosy!
    -> futureself_children
    + (family_alone) <em>Alone </em>
    Enough space for yourself!
    -> futureself_children

=== futureself_children ===
Do you think that in 2038 you will have children?
    + (children_yes) <em>Yes</em>
    Okay.
    -> futureself_pet
    + (children_no) <em>No</em>
    Okay.
    -> futureself_pet

=== futureself_pet ===
Do you think you will have a pet?
    + (pet_yes) <em>Yes</em>
    Exciting!
    -> futureself_job
    + (pet_no) <em>No</em>
    I get that.
    -> futureself_job
```

```
=== futureself_freetime ===
Besides work, you will also have time to do things for yourself. What would you like to do with this
    time?
+ (freetime_hobbies) <em>Use it for my hobbies</em>
Hobbies are so important!
-> wake_up
+(freetime_family) <em>Spending time with family or friends</em>
Family or friends are so important!
-> wake_up
+(freetime_sports)<em>Use it for sports</em>
Let's stay healthy!
-> wake_up
+(freetime_trips)<em>Make day trips</em>
Visiting other places is always an adventure!
-> wake_up
+ (freetime_home)<em>Stay at home</em>
Staying at home can be so relaxed!
-> wake_up
=== wake_up ===
What time would you like to wake up daily?
+ (wake_up_6) <em>Before 6</em>
-> start_scenario
+ (wake_up_6_7) <em>Between 6 - 7</em>
-> start_scenario
+ (wake_up_7_8) <em>Between 7 - 8</em>
-> start_scenario
+ (wake_up_8_9) <em>Between 8 - 9</em>
-> start_scenario
+ (wake_up_9_10) <em>Between 9 - 10</em>
-> start_scenario
+ (wake_up_10) <em>After 10</em>
-> start_scenario
```

B. Questions by Raven – job/community project

```
=== futureself_job ===
In 2038 there is a need for particular types of jobs. Also, people who do not work are still asked to
    contribute to the community in another way. Will you have a job or contribute differently to the
    community?
    + (have_job) <em>I will have a job</em>
    Okay! Let's view some jobs!

    The first job is in the flood fighter team. In 2038 there is a higher risk of flooding. The job of
        a flood fighter is to work during floods to reduce the damage. Your tasks can be evacuating
        citizens, increasing the strength of dikes or moving water to water containers.
    ++ [>]
    The second job is in the heatwave support team. In 2038 there will be more heatwaves, especially
        in and near cities. Heatwaves can be very dangerous for older people and children. During the
        heatwave, you must take care of others and ensure they don't get overheated. You can go around
        houses to see how citizens are doing, bring citizens to a colder environment or provide
        emergency care for citizens whose temperature is too high.
    +++ [>]
    The third job is to help citizens with making their houses sustainable. In 2038 there is still a
        need to educate and support citizens in improving their houses. This has already been done for
        many years but with the increase in temperature and the consequences it is necessary to
        improve houses even more. Your tasks can be to go around houses and check how well adapted
        they are, educate people about the importance of making their houses more sustainable or
        support citizens in finding help for making their houses more sustainable.
    ++++ [>]
    The fourth job is to support the government in making the city greener. In 2038 there is a need to
        ensure that the plants in the city are cared for as they need to grow in an unstable
        environment with floods and heatwaves. A green city is vital for the economy and the heatwaves
        . Your tasks can be to regularly check on the plants in a specific area, control plants after
        a flood or during a heatwave or inspect if there is enough diversity in the plants.


    +++++ [>]
    Which one of these jobs might interest you?
        ++++++ (job_floodfighter)<em>Join the flood fighter team</em>
        Aha, you want to join the flood fighters!
        -> futureself_freetime
        ++++++ (job_heatwave)<em>Join the heatwave support team</em>
        Aha, you want to join the heatwave support team
        -> futureself_freetime
        ++++++ (job_house_sustainable)<em>Help making citizens houses sustainable</em>
        Aha, you want to make houses sustainable
        -> futureself_freetime
        ++++++ (job_greener_city)<em>Support in making the city greener</em>
        Aha, you want to make the city greener
        -> futureself_freetime
```

```
+ (have_no_job)<em>I will contribute to the community differently</em>
Okay! Let's view some projects.

The first project focuses on repairing broken things.
    In 2038 repairing devices or clothes is extremely important to reduce citizens' consumption.
        Reducing consumption is necessary in order to reduce the human impact on the planet.
        Therefore, it is necessary to have people with the knowledge and skills to repair broken
        things in your community. Your tasks depend on your skill and on what is broken. Your
        community will know that you are able to repair their stuff for them and bring stuff to
        you to have it repaired.
++ [>]
The second project focuses on the well-being of citizens.
    In 2038 people might experience more stress due to climate crisis related emergencies.
        Therefore, a good neighbour or community member that people feel comfortable around to
        talk to is necessary. Your task will be to check in with vulnerable members of your
        community regularly, go around houses to drink a cup of tea and be known by your community
        as the well-being responsible.
+++ [>]
The third project focuses on the education of citizens.
    In 2038 children go to school to learn a lot. However, teaching them to take care of nature,
        their own and their community is not taught. Therefore, there is a need for people who can
        give children skills classes in their community. Your task will be to bi-weekly host a fun
        and educative workshop for children where they will learn new skills.
++++ [>]
The fourth project focuses on food production.
    In 2038 local food production is necessary to reduce the human impact on earth. In every
        community, a large garden is installed that needs to be maintained. Your tasks can be to
        water and inspect plants, harvest food, or divide food among neighbours.
+++++ [>]
```

```
+++++ [>]
    Which one of these projects might interest you?
    ++++++ (job_no_repair) <em>Repairing broken things</em>
    Aha, you want to repair things!
    -> futureself_freetime
    ++++++ (job_no_wellbeing) <em>Improving the well-being of citizens</em>
     Aha, you want to join the well-being team
    -> futureself_freetime
    ++++++ (job_no_education) <em>Educating children</em>
     Aha, you want to educate children
    -> futureself_freetime
    ++++++ (job_no_foodproduction) <em>Working on food production</em>
     Aha, you want to work on food production.
    -> futureself_freetime
```

C. Ethical dilemmas in the story

```
+[Check the damage on the window]
+ [Check how the child is doing] As Sam picked up the injured child
```

Or

```
+ [Check on the cut]
 + [Check the damage on the window]
```

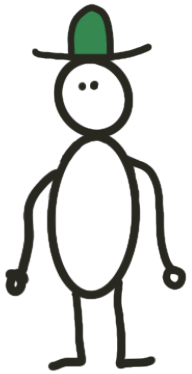
And

```
Fixing the problem would take some more time, but it is what the community asks from me. But how can I
    abandon my home{futureself_family.family_with_someone: Skylar}{futureself_pet.pet_yes:,
    Tommy}{futureself_children.children_yes: and the children}? But how will the community ever accept
    it if I ruin this? Who will help us out in the future? I don't have much time to decide. What
    shall I do…
-> section_7_general

= section_7_general
+ <em>Fix the problem for the community</em>
-> section_8_general
+ <em>Go home</em>
```

D. Simplified example stories

Story three



Profile

Has an appartment in the city.
Lives together with Skylar.
Has children.
Has no pet.
Contributes by repairing things.
Likes to work on hobby projects.
The scenario happens during a flood.

Story two

Profile

Has a house far from the city.
Lives together with Skylar.
Has children.
Has no pet.
Has a job to make houses sustainable.
Likes to stay at home.
The scenario happens during a heatwave.

Story four

Profile

Has an appartment in the city
Lives alone.
Has no children.
Has no pet.
Contributes by rproducing food.
Likes to visit friends and family.
The scenario happens during a heatwave.

Story one

Profile

Has a house near the city.
Lives together with Skylar.
Has no children.
Has a pet named Tommy.
Has a job as a flood fighter.
Likes to make day trips.

Story one

I recently spoke with Sam, who lives near my house. Sam has a **job as flood fighter**. The flood fighters are responsible for evacuating citizens during floods and increasing the strength of dikes or moving water to water containers to ensure that the city does not suffer too much during floods.

As Sam was checking the water containers in the neighbourhood, a neighbour came to ask them about the neighbourhood's safety. The neighbour expressed her concerns about streets of the city because yesterday, the city rang the **flood alarm**.
For your background knowledge: the flood alarm is an alarm that is used when the city expects a flood within one day. The alarm is installed so that everyone can prepare themself to isolate their houses and stock food on time.

Sam expressed that they were also concerned about the upcoming flood. Floods have been an issue in the past few months. The flood fighters have been working very hard to increase the resistance of the city during floods but have not managed to control the floods completely.

Sam expects less damage to the street compared to the last floods, as the flood fighters have installed a new protection system that can create higher walls to surround the street. To ensure the streets are protected, all flood fighters have shifts to work and be responsible for protecting the city.

It was the start of the flood. Sam woke up early in the morning after a bad night of sleep. Sam quickly got out of bed and walked down to the kitchen where **Skylar** was already eating breakfast. **Tommy** got up out of his basket when he saw you and came to you to be petted on the back. How did you sleep, Sam? Skylar asked. Not very well Sam answered. Sam ate breakfast. **At 11 o'clock another alarm went off, meaning that the city officially can no longer get rid of all the water.**

Sam and Skylar started to make their final round through the house, checking if it was isolated correctly. There was little to do on days like these besides checking in with your neighbours and waiting for your shift.

Sam had a couple of hours to go before the shift started. Feeling locked inside always makes Sam value the time that can be spent outside. **Sam started to plan a new adventure by exploring new countries in the metaverse.**

In the middle of Sam's activity a **window broke**. Sam felt a short sting and saw blood falling on the floor. One of the small living room windows broke. Sam knew a broken window could cause a lot of water damage. Sam quickly put a metal shield in front of the window to stop the rain and wind from coming in. The floor was wet and needed to be cleaned later. Skylar entered the room with a medical device to heal the cut.

The next day at 14:00, Sam's pager indicated that the shift had started. **Sam was now responsible** for evacuating citizens, increasing the strength of the dikes, moving water to the containers, and checking the streets. Quickly Sam said goodbye and put on the protective clothes. Being able to see clearly in the storm and not getting soaked was crucial when working.

As Sam got outside, the weather was way worse than it had seemed from the inside. The water was everywhere, the wind was so strong, and branches of trees were lying everywhere. The pager went off again. Someone needed help.

Sam had to hurry and started walking. The pager told Sam that one of the new street-protecting walls broke, and water flooded into the street. After 10 minutes, Sam approached the street. Someone was making a noise. **Sam over here! A voice shouted**. But Sam could not see anyone. Sam, to your right! The voice shouted again. And there she was. Sam saw a young girl waving. She was far away, so Sam had to walk faster.

The girl explained that, at first, the walls were working fine, but they saw that one of them was breaking due to the pressure of the water. Sam asked the girl to talk more slowly because **the weather exhausted Sam**. Once Sam understood what was happening, a plan was made to tackle this situation. Sam had to see where the wall was breaking and improvise a temporary fix that could last during this flood. Sam started walking towards the wall in the middle of the storm. Thank you Sam, and please be careful out there, the girl said.

The problem was more complex than it seemed. Not only the wall was breaking but also it was very slowly going down. In the middle of all the chaos, **a vibration was felt in one of Sam's pockets.** Please, not now, Sam mumbled. Answer call Sam said. It was Skylar and the children. You need to come home now! They said.

I'm in the middle of something. What is going on? I don't have much energy to talk.

Sam, something is wrong. Please come.

What is wrong? Tell me.

Sam, **more windows broke**. There is glass everywhere the children are hurt. I can barely keep it together here. The water is everywhere. The electricity is down, the wind is going through our home. You must get here. I don't know how much longer the house is safe. I thought we were prepared for this! Please come and help.

You know I cannot abandon my shift. How will the community react to this?

Sam, I would not ask you to do this if this would not be an emergency!!

Fixing the problem would take some more time, but it is what the community asks from me. But how can I abandon my home, Skylar and Tommy? But how will the community ever accept it if I ruin this? Who will help us out in the future? **I don't have much time to decide**.
What shall I do…

Fix the problem for the community or go home….

Story two

I recently spoke with Sam, who lives near my house. Sam has a **job in making houses more sustainable**. Educating citizens on how to make their houses sustainable is critical to surviving long-lasting heatwaves and floods. This could mean you go around places and check and explain how citizens can make their houses more sustainable.

As Sam was checking a neighbour's house, the neighbour expressed her concerns about the isolation of her house because yesterday, **the city rang the heatwave or flood alarm**.
For your background knowledge: the heatwave or flood alarm is an alarm that is used when the city expects a heatwave or flood within one day. The alarm is installed so that everyone can prepare themself to be able to stay cool during the upcoming heatwave.

Sam expressed that they were also concerned about the upcoming heatwave. Heatwaves have been an issue in the past months. Even though an enormous effort has been made to educate citizens in making their houses more sustainable, more is needed. During the last few heatwaves, houses still became too hot after a couple of days, and citizens had to be evacuated.

Sam expects that things will be different this time. Over the past few days, the team has educated citizens and helped them isolate their houses. However, during the heatwave, the team is now also part of the heatwave support team and certified to provide emergency repairs in citizens' houses. They all must work in shifts.

It was the start of the heatwave. Sam woke up early in the morning after a bad night of sleep. Sam quickly got out of bed and walked down to the kitchen where **Skylar** was already eating breakfast together **with the children**. How did you sleep, Sam? Skylar asked. Not very well Sam answered. Sam ate breakfast and played a game with the children. **At 11 o'clock another alarm went off, meaning that the city is officially in a heatwave.**

Sam and Skylar started to make their final round through the house, checking if it was isolated correctly. There was little to do on days like these besides checking in with your neighbours and waiting for your shift.

Sam had a couple of hours to go before the shift started. Even though most people hated being locked inside the house, Sam also enjoyed it in moments. **Staying at home** always brought a specific feeling of relaxation and helped Sam get energised for after the event. The very comfortable sofa was calling Sam's name, and Sam decided to sit there for a while.

In the middle of Sam's activity **one of the children started to cry**. Sam hurried to the other room and analyzed the situation. One of the small living room windows broke, and the child had a cut. Sam knew a broken window could cause an allergic reaction. People were highly sensitive to pollen these days, as the pollen concentration in the air was very high. As Sam picked up the injured child The drone entered the room with a medical device to heal the cut. Sam quickly put a metal shield in front of the window to stop the wind filled with pollen from coming in. Quickly, Sam gave the antihistamine injections.

The next day at 14:00, Sam's pager indicated that the shift had started. **Sam was now responsible** for taking care of the citizens and providing emergency care or moving people to a cooler place. Quickly Sam said goodbye and put on the protective clothes. Wearing a mask is crucial not to inhale too much pollen. As Sam got outside, the weather was way worse than it had seemed from the inside. It was so hot and humid, yet there was enough wind to create a pollen storm making it hard to see clearly. The pager went off again. Someone needed Sam.

Sam had to hurry and started walking. The pager told Sam that someone had trouble breathing and needed emergency care. After 10 minutes, Sam approached the street. Someone was making a noise. **Sam over here! A voice shouted**. But Sam could not see anyone. Sam, to your right! The voice shouted again. And there she was. Sam saw a young girl waving. She was far away, so Sam had to walk faster.

The girl explained that her grandmother had trouble breathing because she accidentally opened a window. Sam asked the girl to talk more slowly because **the weather exhausted Sam**. Once Sam understood what was happening, a plan was made to tackle this situation. Sam had to analyze how the lady was doing, see if she inhaled too much pollen, and check for the open window. In the middle of the pollen storm, Sam started to walk around the house to look for the window. Thank you, Sam, and please help my grandmother, the girl said.

The problem was more complex than it seemed. Not only was the window open, but also it could not be closed, and the grandmother had locked herself in the bathroom. In the middle of all the chaos, a vibration was felt in one of Sam's pockets. Please, not now, Sam mumbled. Answer call Sam said. It was Skylar and the children. You need to come home now! They said.

I'm in the middle of something. What is going on? I don't have much energy to talk.

Sam, something is wrong. Please come.

What is wrong? Tell me.

Sam, **more windows broke**. There is glass everywhere the children are hurt. I can barely keep it together here. The water is everywhere. The electricity is down, the wind is going through our home. You have to get here. I don't know how much longer the house is safe. I thought we were prepared for this! Please come and help.

You know I cannot abandon my shift. How will the community react to this?

Sam, I would not ask you to do this if this would not be an emergency!!
Fixing the problem would take some more time, but it is what the community asks from me. But how can I abandon my home Skylar and the children? But how will the community ever accept it if I ruin this? Who will help us out in the future? **I don't have much time to decide**.
What shall I do...

Fix the problem for the community or go home....

Story three

I recently spoke with Sam, who lives in my apartment complex. Sam **contributes to the community by repairing broken things**. The repair team supports reusing devices and repairing broken things. Besides repairing stuff, the team adds value to the community with their specific knowledge.

As Sam was working in the repair store, a neighbour expressed her concern about the street because yesterday, **the city rang the heatwave or flood alarm**.
For your background knowledge: the heatwave or flood alarm is an alarm that is used when the city expects a heatwave or flood within one day. The alarm is installed so that everyone can prepare themself to be able to stay cool during the upcoming heatwave.

Sam expressed that they were also concerned about the upcoming flood. Floods have been an issue in the past few months. The volunteers try to repair devices and parts of houses, such as doors. A lot of effort has been made already. However, the past few floods still damaged a lot of houses.

Sam expects to have less damage done to the houses compared to the last floods. The volunteers have worked hard in the past 24 hours to repair broken doors, fences, windows, or other parts of the house. They have also checked crucial parts of houses for their resistance. However, during the flood, the expertise of the volunteers can still be crucial if something breaks to limit the damage. Therefore, the team works in shifts and needs to be on call and available if someone needs them.

It was the start of the flood. Sam woke up early in the morning after a bad night of sleep. Sam quickly got out of bed and walked down to the kitchen where **Skylar** was already eating breakfast together **with the children**. How did you sleep, Sam? Skylar asked. Not very well Sam answered. Sam ate breakfast and played a game with the children. **At 11 o'clock another alarm went off, meaning that the city officially can no longer get rid of all the water.**

Sam and Skylar started to make their final round through the house, checking if it was isolated correctly. There was little to do on days like these besides checking in with your neighbours and waiting for your shift.

Sam had a couple of hours to go before the shift started. In the corner of the room, **an old hobby of Sam drawed attention**. Sam entered another room, played music, and started a new hobby project.

In the middle of Sam's activity **one of the children started to cry**. Sam hurried to the other room and analysed the situation. One of the small living room windows broke, and the child had a cut. Sam knew a broken window could cause a lot of water damage. People were highly sensitive to pollen these days, as the pollen concentration in the air was very high.

As Sam picked up the injured child Skylar entered the room with a medical device to heal the cut. Sam quickly put a metal shield in front of the window to stop the rain and wind from coming in. The floor was wet and needed to be cleaned later.

The next day at 1400, Sam's pager indicated thate shift had started. It was now **Sam's responsibility to**

provide emergency repairs. Quickly Sam said goodbye and put on the protective clothes. Being able to see clearly in the storm and not getting soaked was crucial when working.

As Sam got outside, the weather was way worse than it had seemed from the inside. The water was everywhere, the wind was so strong, and branches of trees were lying everywhere. The pager went off again. Someone needed help.

Sam had to hurry and started walking. The pager told Sam that another volunteer had asked for help. Someone's door broke, and the water was getting into the house. After 10 minutes, Sam approached the street. Someone was making a noise. **Sam over here! A voice shouted**. But Sam could not see anyone. Sam, to your right! The voice shouted again. And there she was. Sam saw a young girl waving. She was pretty far away, so Sam had to walk faster.

The girl explained that the flood broke the walls to protect the street. The water that was flushed into the street broke down her door. The flood fighter was fixing the wall, but the door was still broken. Sam asked the girl to talk more slowly because **the weather exhausted Sam.** Once Sam understood what was happening, a plan was made to tackle this situation. In the middle of the storm, Sam started to analyse the damaged door. Thank you Sam, and please be careful out there, the girl said.

The problem was a bit more complex than it seemed. Not only the door broke, but also the windows next to the door. In the middle of all the chaos, a vibration was felt in one of Sam's pockets. Please, not now, Sam mumbled. Answer call Sam said. It was Skylar and the children. You need to come home now! they said.

I'm in the middle of something. What is going on? I don't have much energy to talk.

Sam, something is wrong. Please come.

What is wrong? Tell me.

Sam, **more windows broke**. There is glass everywhere the children are hurt. I can barely keep it together here. The water is everywhere. The electricity is down, the wind is going through our home. You must get here. I don't know how much longer the house is safe. I thought we were prepared for this! Please come and help.

You know I cannot abandon my shift. How will the community react to this?

Sam, I would not ask you to do this if this would not be an emergency!!

Fixing the problem would take some more time, but it is what the community asks from me. But how can I abandon my home Skylar and the children? But how will the community ever accept it if I ruin this? Who will help us out in the future? **I don't have much time to decide**.
What shall I do…

Fix the problem for the community or go home….

Story four

I recently spoke with Sam who lives in my apartment complex. Sam **contributes to the community by producing food for the community.** The volunteers produced the food for everyone living on the same street. It is a large part of the food they eat weekly.

As Sam was working in the community garden, a neighbour approached them to ask questions about the garden. The neighbour expressed her concerns about the harvest for the upcoming weeks because yesterday, **the city rang the heatwave or flood alarm.**
For your background knowledge: the heatwave or flood alarm is an alarm that is used when the city expects a heatwave or flood within one day. The alarm is installed so that everyone can prepare themself to be able to stay cool during the upcoming heatwave.
Sam expressed that they were also concerned.

Heatwaves have been an issue for the last couple of months. However, with other volunteers, they created a schedule to take care of the garden throughout the heatwave. Besides, they also improved the garden by providing more shadow.

Sam expects less damage to the plants than the last heatwaves because they made some significant improvements. However, the volunteers still need to keep an eye on the garden, and they made a strict schedule with shifts. During this shift, it is essential to maintain the garden, and fix broken parts if needed.

It was the start of the heatwave. Sam woke up early in the morning after a bad night of sleep. Sam quickly got out of bed and walked down to the kitchen where **the coffee machine** prepared a fresh cup of coffee. How did you sleep, Sam? The drone asked. Not very well Sam answered. Sam ate breakfast. **At 11 o'clock another alarm went off, meaning that the city officially is in a heatwave.**

Sam started to make their final round through the house, checking if it was isolated correctly. There was little to do on days like these besides checking in with your neighbours and waiting for your shift.

Sam had a couple hours to go before the shift started. **Sam was wondering how their friends and families were doing** and decided to call them. When walking to a separate room, Sam already received a call. Hi Kai, how are you doing? Sam asked.

In the middle of Sam's activity **a window broke**. Sam felt a short sting and saw blood falling on the floor. Sam hurried to the other room and analysed the situation. One of the small living room windows broke. Sam knew a broken window could cause an allergic reaction. People were highly sensitive to pollen these days, as the pollen concentration in the air was very high.

Sam quickly put a metal shield in front of the window to stop the wind filled with pollen from coming in. Quickly, Sam gave the antihistamine injections. The drone entered the room with a medical device to heal the cut. Okay, this a quick fix for now. Let's keep an eye on that window for the upcoming day.

The next day at 14:00, Sam's pager indicated that the shift had started. **Sam was now responsible for**

protecting the garden to secure food production. Quickly Sam said goodbye and put on the protective clothes. Wearing a mask is crucial not to inhale too much pollen. As Sam got outside, the weather was way worse than it had seemed from the inside. It was so hot and humid, yet there was enough wind to create a pollen storm making it hard to see clearly. The pager went off again. The garden needed Sam's help.

Sam had to hurry and started walking. The pager told Sam that a part of the protection broke. After 10 minutes, Sam approached the garden. Someone was making a noise. Sam over here! A voice shouted. But Sam could not see anyone. **Sam, to your right! The voice shouted again**. And there she was. Sam saw a young girl waving. She was pretty far away, so Sam had to walk faster.

The girl explained that parts of the protection got too hot and melted. Sam asked the girl to talk more slowly because **the weather exhausted Sam**. Once Sam understood what was happening, a plan was made to tackle this situation. In the middle of the pollen storm, Sam started to see what had been melted and looked for new materials. Thank you, Sam, and please be careful out there, the girl said.

The problem was a bit more complex than it seemed. Not only was the protection melting, but the sun also became hotter and hotter. In the middle of all the chaos, a vibration was felt in one of Sam's pockets. Please, not now, Sam mumbled. Answer call Sam said. It was the drone. You need to come home now! they said.

I'm in the middle of something. What is going on? I don't have much energy to talk.

Sam, something is wrong. Please come.

What is wrong? Tell me.

Sam, **more windows broke**. There is glass everywhere. I can barely keep it together here. It is getting so hot and humid inside, and the wind blows all the pollen inside. I don't know how much longer the house is safe. I thought we were prepared for this! Please come and help.

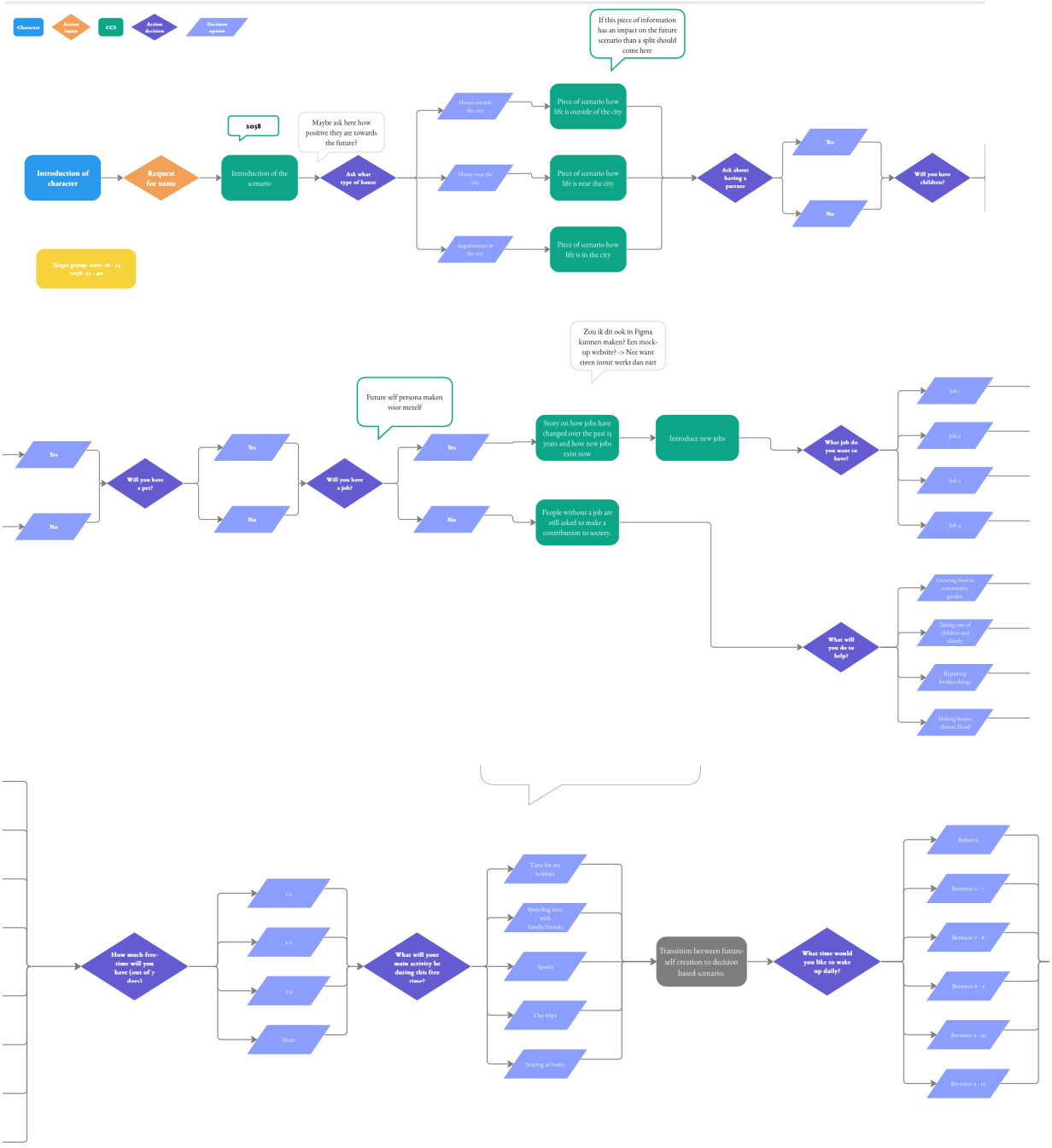
You know I cannot abandon my shift. How will the community react to this?

Sam, I would not ask you to do this if this would not be an emergency!!

Fixing the problem would take some more time, but it is what the community asks from me. But how can I abandon my home? But how will the community ever accept it if I ruin this? Who will help us out in the future? **I don't have much time to decide**.
What shall I do...

Fix the problem for the community or go home....

E. Flow chart


Character
Action input
CCS
Action decision
Decision option
If this piece of information has an impact on the future scenario than a split should come here
2038
Maybe ask here how positive they are towards the future?
Introduction of character
Request for name
Introduction of the scenario
Ask what type of house
House outside the city
House near the city
Appartement in the city
Piece of scenario how life is outside of the city
Piece of scenario how life is near the city
Piece of scenario how life is in the city
Ask about having a partner
Yes
No
Will you have children?
Target group: now: 18 - 25 2038: 35 - 40
Zou ik dit ook in Figma kunnen maken? Een mock-up website? -> Nee want eiren input werkt dan niet
Future self persona maken voor mezelf
Yes
No
Will you have a pet?
Yes
No
Will you have a job?
Yes
No
Story on how jobs have changed over the past 15 years and how new jobs exist now
Introduce new jobs
What job do you want to have?
Job 1
Job 2
Job 3
Job 4
People without a job are still asked to make a contribution to society.
What will you do to help?
Growing food in community garden
Taking care of children and elderly
Repairing broken things
Making homes climate Proof
How much free-time will you have (out of 7 days)
1-2
3-5
1-4
More
What will your main activity be during this free time?
Time for my hobbies
Spending time with family/friends
Sports
Day trips
Staying at home
Transition between future-self creation to decision based scenario.
What time would you like to wake up daily?
Before 6
Between 6 - 7
Between 7 - 8
Between 8 - 9
Between 9 - 10
Between 9 - 10

F. Questionnaire

Perception that global climate change is occurring:

How likely do you think it is that global warming is occurring now?
very unlikely - unlikely - unsure - likely - very likely

I have already noticed some signs of global warming.
strongly disagree - disagree - unsure - agree - strongly agree

It seems to me that temperature is warmer now than in years before.
strongly disagree - disagree - unsure - agree - strongly agree

It seems to me that weather patterns have changed compared to when I was a child.
strongly disagree - disagree - unsure - agree - strongly agree

I am quite sure that global warming is occurring now.
strongly disagree - disagree - unsure - agree - strongly agree

The following is an actual newspaper article reported last year:

North Pole free of ice for the first time in 50 million years.
The North Pole is melting. The thick ice that has for ages covered the Arctic Ocean at the pole has turned to water, recent visitors there reported this weekend. At least for the time being, an ice-free patch of ocean about 1 1⁄2 kilometres wide has opened at the very top of the world, something that has never be- fore been seen by human beings and is more evidence that global warming may be real and already affecting climate.

When you read this article, what is the statement that most closely represents your response to this article?

It is an obvious sign that global warming is actually occurring.
I think probably this indicates that global warming is occurring.
I am unsure what to make of it.
I am still not that convinced that global warming is occurring.
This article is an exaggeration; it does not prove at all that global warming is occurring.

Perception of causes:
(The response format for all of the items below is the same: strongly agree to strongly disagree.)

Global warming is mainly due to natural causes, not human activity.

The main causes of global warming are human activities.

Global warming is merely a natural fluctuation, not caused by human activity.

I am quite sure that human activities are to be blamed for global warming.

Perception of consequences:

Unlike what most scientists say, there will be some positive consequences of global warming for the environment.

The consequences of global warming will be harmful for the environment.

Global warming will bring about some serious negative consequences.

The consequences of global warming will be more positive than negative overall.

Self-efficacy:

There are simple things that I can do that will have a meaningful effect to alle- viate the negative effects of global warming.

I believe that little things I can do will make a difference to alleviate the nega- tive effects of global warming.

Even if I try to do something about global warming, I doubt if it will make any difference.

There is very little I can do to mitigate the negative effect of global warming.

Intention to act:

I plan to take some actions to stop global warming.

I personally do not intend to do much to stop global warming.

I will make some efforts to mitigate the negative effects of global warming.

I intend to take concrete steps to do something to mitigate the negative effects of global warming.

G. Interview

Topic: The story
How did you experience the story?

Subtopic: Future-self creation
How did you experience thinking of a future version of yourself?

Subtopic: Sam lived the life that you mapped out for yourself
How did you experience that a similar person as your future self already experienced the future, and you got to read that?

Topic: Personal future
How did it make you think about your future?

Topic: Connection between present and future you
Did the story change the way you see a connection between the present and future you? Does the future feel closer to you?

Topic: motivation
[COMPETENCE] Do you think you can change something about the present you that affects climate change and, therefore, also the future you?

[RELATEDNESS] Do you feel that your future self can play a role in climate change? And your present self?

[AUTONOMY] Do you think you are free to make your own choices in the situation of climate change?

Do you feel empowered to change something in your everyday life to create a proper future for yourself?

Topic: weather, moment of action

What would be the moment for you to change something?

What do you do already now to deal with extreme heat or water?

Was there a moment were you had to deal with extreme weather?

Is there a moment you did something different because of heat or flood?

Topic: Presentation
In the news you often see climate change scenarios. How personally relevant are they to you? And how relevant did this story feel to you?

Additional comments:

H. Post research questions

Hi! Recently you participated in my research. You read a story and I interviewed you on your thoughts about the present and future.

As a follow-up I have some additional questions for you!

1. Have you thought about the future after the research?
2. Have you thought about your future-self after the research?
3. Have you thought about your role in shaping the future?
4. Have you changed anything in your lifestyle related to climate change?

5. Other thoughts you would like to share with me?

Answers do not need to be long, but please explain yourself. Answers can be given in Dutch. Thanks in advance

I. Data analysis on risk perception, willingness to act and self-efficacy

Overview of all the average scores per participant in the pre- and post-research questionnaire.

Participant n	Perception gl	Perception of	Perception gl	Perception of	Perception of	Perception of	Self-efficacy (I	Self-efficacy (A	Intention to a	Intention to a
1	4,8	5	4,25	4,75	5	5	3	3,25	4	4
2	3,8	4,6	5	5	5	4,75	2,75	2,75	4	3,75
3	4,4	4,6	4,5	4,75	3,5	4,25	2,25	3,25	3,5	4
4	3,2	3,4	3,5	3	3,5	3,5	2,75	3	4	3,75
5	4,2	4,4	3,5	4	4	4,25	3,25	3,75	4	4
6	4,8	5	3,75	5	4,5	5	4,25	4,75	4	3,75
7	4,8	4,8	4,25	4,5	4,75	4,25	4,25	4,25	4,25	4,25
8	4,4	4,4	3,75	4,25	3,75	3,5	3	3,75	3,5	4
9	4,6	5	4,5	5	4,5	5	4	4,25	3,75	4
10	4,8	4,8	5	5	4,5	5	2,25	3,75	2,75	3,5
11	4,8	4,8	5	5	4,75	5	3,5	4,25	4	5

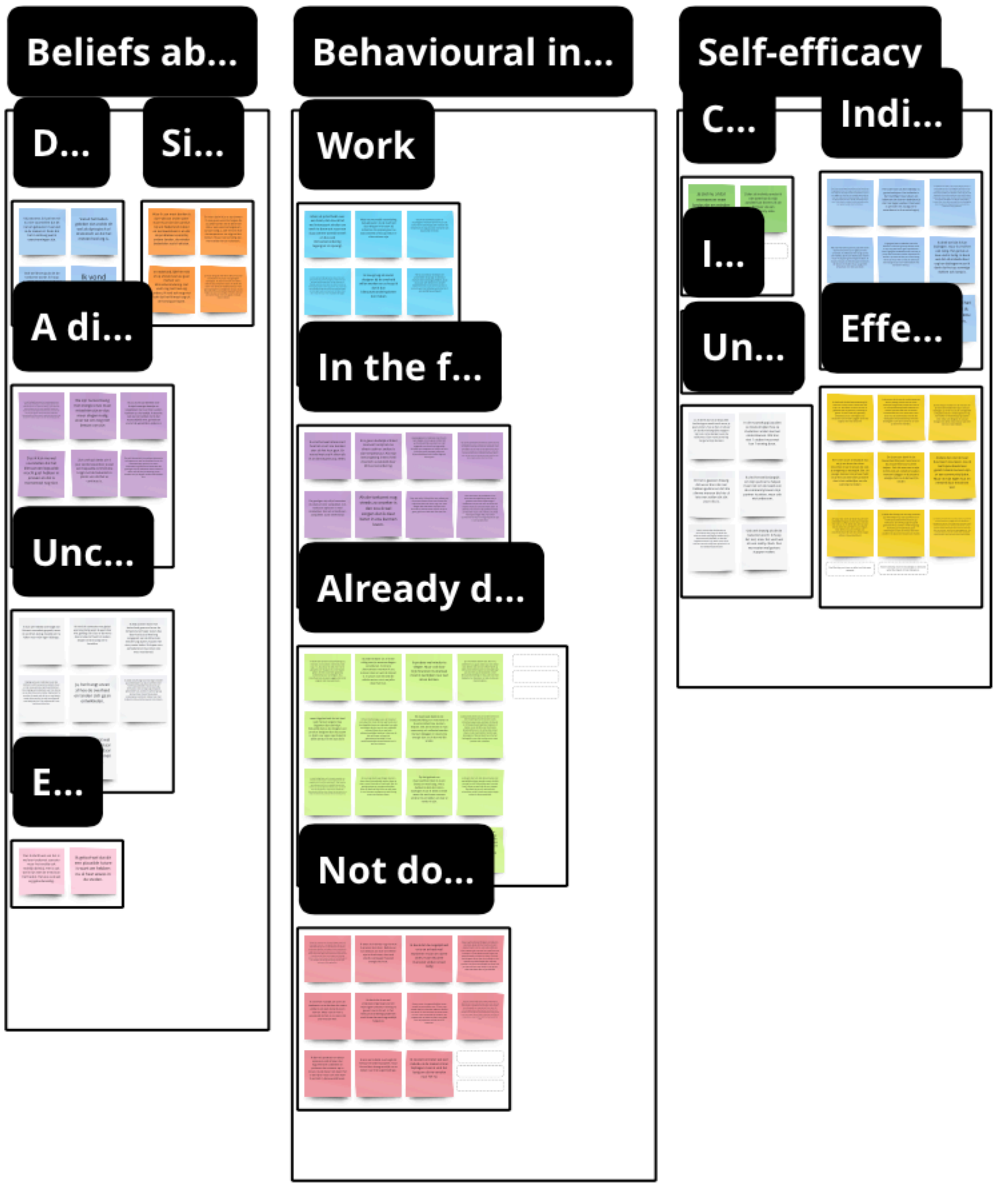
Overview of score per determinant and quotes from interviews. Analysing where the quote matches the score and where not (red.- no match), (orange – somewhat a match), (green – match).

	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11
Average (all)	0,6	0	1	0	0,8	0,6	0	0,4	1	0,6	0,6
Perception global chlimate change is occuring	1	1	1	1	1	1	0	0	1	0	0
Perception of causes	1	0	1	-1	1	1	1	1	1	0	0
Perception of consequences	0	0	1	0	1	1	-1	-1	1	1	1
Average beliefs GCC	0,7	0,3	1,0	0,0	1,0	1,0	0,0	0,0	1,0	0,3	0,3
	Dit toekomstbeeld laat je iets realistischer nadenken over hoe je kan omgaan met global warming. En ook interessant om andere informatie te krijgen over wat het betekend voor de mensheid	Dus ik kan me wel voorstellen dat het klimaat een bepaalde macht gaat hebben in je leven en dat is momenteel nog niet.	Al tien jaar wordt er gezegd dat het 'erger' gaat worden, het is constant om je heen en niet incidenteel. Zo'n verhaal denkt al 15 jaar verder waardoor je wel een bepaalde confrontatie krijgt met de toekomst in plaats van dat het er continue is.	Is er in 2038 niet meer innovatie m.b.t. overstromingen. Ik kom kom uit Flevoland dus we kunnen al heel veel met dijken enz. Dus het probleem was iets minder realistisch.	Het relateerde eerst aan hoe je zelf je toekomst ziet, maar daarna gaat het over een dystopisch scenario en ik denk dat dat ik weet niet of ik denk dat het echt zo zal zijn in 15 jaar.	Ik heb filmpjes gezien over el nino en toen werd er ook al verteld dat de schommeling er is maar dat door CC er grotere en ergere schommelingen zijn. En nu denk ik wel dat dit verhaal er toch wel sneller aan komt dan dat ik daarvoor zou denken. De zomers zijn warmer, meer onweer, vakantie plekken zijn nog warmer. Zet me aan het denken	De trend in hoe de temperatuur nu stijgt zal dat binnen 15 jaar niet zo heftig zijn. Het voelde niet zo realistisch.	De wereld gaat wel naar de tering maar ik hoop dat we daar nog iets aan kunnen veranderen. Ik zou in Nederland blijven wonen omdat het weer hier waarschijnlijk minder extreem zal worden.	Ik vond het dystopisch. Ik vind het wel interessant hoe het er uit zou kunnen zien als het fout gaat. En vooral wat zou ik doen als ik in die situatie zou zitten.	Ik geloof wel dat dit een plausible future is want we hebben nu al heat waves in de steden. En vooral in vergelijking met vroeger. Het doet me wel realiseren dat ik in zo'n toekomst terecht kan komen dus dat brengt het dichterbij maar dat vind ik niet zo'n fijn gevoel. Ik zou het liever ontkennen bijvoorbeeld met vlees eten, ik weet dat het slecht is en ik doe het minder maar ik doe het niet helemaal niet.	Vrij extreem, ik kan het me nu niet voorstellen dat dit nu kan gebeuren maar wel in de toekomst
Self efficacy	1	0	1	1	1	1	0	1	1	1	1
	ik denk dat iedere consument kan bijdragen aan klimaatverandering maar de echt grote stappen komen vanuit bedrijven en de overheid, maar dat beperkt wel je keuzes	ik weet niet of het uitmaakt wat ik doe en wat ik zou kunnen doen. Ja ik denk dat er wel iets is wat ik kan doen, maar het ik vind het lastig om te zeggen of ik een significante bijdrage kan leveren	Ik denk dan wel van wat kan ik doen en wat heb ik voor impact. Dan denk je na zo'n verhaal van misschien moet ik toch een extra stapje zetten in duurzaamheid. Het zet het wel in perspectief.	Zeker als individu omdat ik niet weet hoe ik mijn aandeel kan leveren. Ik zie dit meer als een community actie.	Ik reflecteer het terug op mij als individu dus ik kan wel keuzes maken maar ik zal geen grote impact maken. Ik maak al keuzes en heb de open mind om die keuzes te maken maar op grotere schaal kan ik er niks aan doen.	Het is een soort sneeuwbal dus als jij iets doet dan doen misschien meer mensen dat ook. Je omgeving is belangrijk. Bijv. als je vega mensen om je heen hebt en je het ook een keert probeert dan is het makkelijker om die overstap te maken.	Ik denk wel dat elk individu heel erg kan bijdragen maar ik denk dat het op sommige vlakken ook lastig is.	Maar voornamelijk verandering kan gebeuren als de overheid daar dingen in forceert bij instanties.	In mijn werk kan ik hopelijk systemen veranderen en impact leveren op hoe dingen gedaan worden op grotere schaal dan mijn persoonlijke bijdrage. Ik denk dat het wel kan helpen om mijn eigen leven ook duurzamer te maken maar dat in mijn werk daar meer mogelijkheden liggen.	dus ja dat is zo van je weet het wel maar je doet het toch. Net als snoep eten, je weet dat het slecht is maar je eet het toch. Ik zou graag als social designer bij de overheid willen werken en zo hoop ik dat ik dan klimaatverandering beter kan maken	Je weet wel dat je er mee bezig moet zijn maar het is veel om allemaal mee bezig te zijn. En ook wel hoeveel mensen hier van weg kijken, ik zou misschien ook moeten gaan bijdragen aan bewustzijn.
Intention to act	0	-1	1	-1	0	-1	0	1	1	1	1
	Ik denk dat een aantal jaar terug wilde ik altijd vegetariër worden maar dat lukte me eigenlijk nooit (vanwege dieren). Nu ben ik het vanwege het milieu felixatiër dus dat geeft me hoop voor de toekomst dat ik deze keuzes kan blijven maken en dat het dus belangrijk is om door te gaan met info verzamelen om dus me erop voor te bereiden.	Ik zie wel concreter wat een individu in de toekomst kan bijdragen maar ik vind het lastig om dat te vertalen naar het nu. De muur waar ik tegen aan loop staat er nog steeds, alsof ik niet een essentieel verschil ga maken. De meeste potentie zit in een systematische verandering. Het voelt heel erg alsof dat het enige is wat ik kan doen tot een echte verandering maar zelfs daar weet ik niet of ik er in geloof.	Ik weet niet of dit experiment me echt empowered heeft laten voelen. Maar dat komt ook in dit moment door te kijken naar mogelijkheden en te kijken naar wat je doet. Het is niet zo als je geen hamburger koopt je dan meteen het co2 niveau ziet dalen. Ik ben wel meer bewust.	Alles wordt nog steeds gemaakt van fosiele brandstoffen dus ik weet als individu nog niet wat ik precies kan doen. Behalve er van bewust zijn wat verschillen zijn in de uitstoot, dus toch steeds overwegen hoeveel energie iets kost.	Nee ik wil niet meer dingen veranderen omdat ik denk dat het toch niet echt impact heeft. Het is ook niet zichtbaar dus je weet ook niet wat het resultaat van je acties is. Dus daarom voel ik me niet gemotiveerd om meer te doen.	Ja wel meer na het verhaal. Ook meer überhaupt want het is meer in de media en in je omgeving. Ik vind het fijner als er meer uitleg zou zijn waarom dingen veranderen. Concrete alternatieven met wat ik zou kunnen doen en wat de impact is.	Ik denk dat de mogelijkheid er is en er heel veel manieren er zijn om dat te doen, maar de juiste manieren vinden is best lastig. ik voel wel dat ik dat kan doen maar ik denk dat er nog meer onderwijs nodig is voor mensen die dat ook gaan doen.	Ik wil meer de trein gebruiken in plaats van vliegen. Ik kon voor €15 naar Italië vliegen, dat lukt nooit met de trein.	Nee, niet echt. Ik denk dat het maken van duurzame keuzes komt met financiële vrijheid en die heb ik nu nog niet	In het klimaatveranderingsprobleem voel ik me dan wel nog redelijk hulpeloos. Het voelt toch als het individu vs grote bedrijven. Het individu is het machtigst maar alleen als iedereen dat doe ten bedrijven je dan niet tegen werken	Ik denk wel dat die bewustwording bij mensen om mij heen creëren dat dat stap 1 is. Dus door er wel af en toe in gesprek over te gaan en je mening te geven.. Dus misschien kan ik vaker zeggen dat ik het ergens niet mee eens ben. Ik zou nog steeds wel dingen kunnen doen door bijvoorbeeld minder vlees te eten, maar ik minder al heel veel.

Large, detailed overview cleaned.

	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11
Average over all categories	Increase	Unchanged	Increase	Unchanged	Increase	Increase	Unchanged	Increase	Increase	Increase	Increase
	Beliefs about GCC										
Score	Increase	Increase	Increase	Unchanged	Increase	Increase	Unchanged	Unchanged	Increase	Increase	Increase
Quote	Interesting to see what global climate change means for humanity	I can imagine that climate change will control or play a role in our future lives	Climate change is continuously around us, the story causes a confrontation with climate change and with the future.	I think that in 2038 there has been more innovation done related to floods.	I do not think this scenario will be real in 15 years. It was very dystopic.	I think climate change is coming for us faster than I expected.	I do not think the temperature will increase a lot in 15 years.	The world is breaking and I hope we can change something about that.	I think the story was very dystopic.	I think this future is plausible.	I can imagine that this scenario can happen in the future.
	Self efficacy										
Score	Increase	Unchanged	Increase	Increase	Increase	Increase	Unchanged	Increase	Increase	Increase	Increase
Quote	I think everyone can contribute to counteracting climate change.	I do not know if it matters what I do, but I think I can do something.	After this story I think I need to put in some extra effort for sustainability.	I think we can make the most impact as a community.	As individual I can make sustainable choices but I will not make a significant impact.	It is like a snowball, if I do something maybe more people around it will do the same.	I think an individual can contribute.	Change can only be made by the government.	I think I can make changes in my personal life, however most impact will be made in my work.	I hope I can make a chage via my work later as social designer.	Maybe I can help creating more awareness.
	Intention to act										
Score	Unchanged	Decrease	Increase	Decrease	Unchanged	Decrease	Unchanged	Increase	Increase	Increase	Increase
Quote	I want to continue gathering information to become more sustainable.	I see what I can do in the future but I do not know how that translates to the present.	I am more aware of what I can do.	I can consider alternatives but I do not know what impact I can make.	I do not want to change things as it will not make a difference.	I can change if I have concrete alternatives.	I think I can do something but there is a need to educate others before they will take action.	I want to use the train more often.	No, I do not think I can make sustainable choices looking at my current financial situation.	I feel helpless in climate change.	I think that I can start with creating awareness in my own environment.

Clusters per determinant



J. Data analysis on motivation

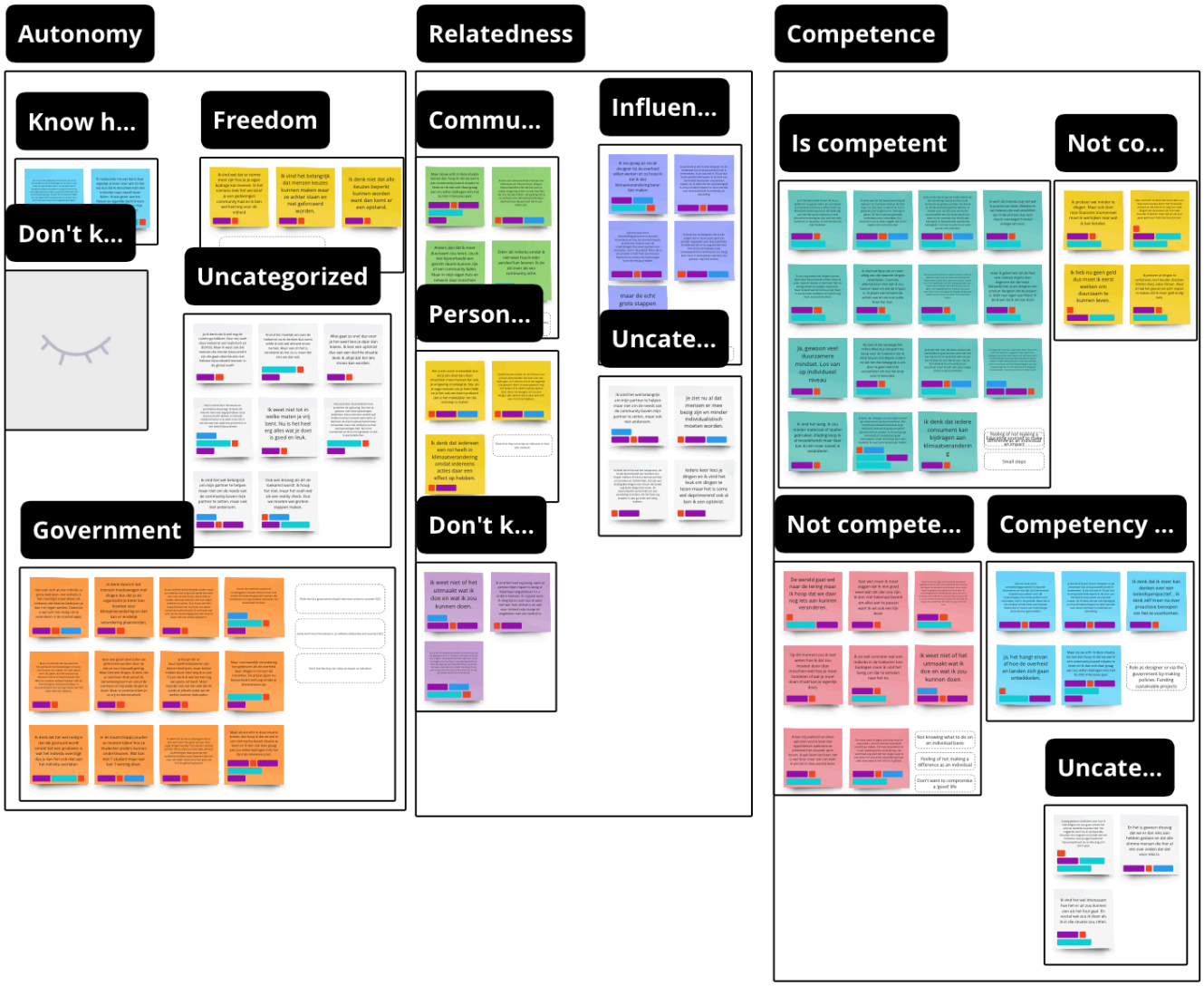
Overview of score per determinant and quotes from interviews. Analysing where the quote matches the score and where not (red.- negative), (orange – neutral), (green – positive).

Competence	Ik probeer al dingen te verbeteren, kort kouder douchen minder vlees, vaker fietsen. Maar ik heb het gevoel om echt impact te maken dat ik meer geld nodig heb	Ja ik denk dat er wel iets is wat ik kan doen, maar het ik vind het lastig om te zeggen of ik een significante bijdrage kan leveren. Want de grootste vervuilers kan ik niet beïnvloeden	Ik zie de urgentie en het belang en problemen maar het is heel moeilijk om daar iets mee te doen. Ik ben me er meer van bewust en dat heb ik nu maar ook wel vaker.	Ja maar dat gaat wel meer de kant op van voorkomen in plaats van gevolgen verhelpen.	Vast wel, maar ik moet zeggen dat ik niet goed weet wat dat dan zou zijn. Ik ben niet helemaal bereid om alles aan te passen want ik wil ook een fijn leven.	Ik vind het lastig. Ik zou minder materiaal of spullen gebruiken	Ja, gewoon veel duurzamere mindset. [kijkt naar eigen spa flesje]. Ik denk wel dat ik iets kan doen	Maar ook door mijn financiën momenteel moet ik wel kijken naar wat ik kan betalen.	Ja in het klein denk ik wel.	Ja de acties die ik sws wil ondernemen en die mij weinig moeite kosten zoals stemmen op groene partijen dat doe ik al.	Maar ik denk wel dat ik me er wel meer in zou kunnen verdiepen en wat ik nog meer zou kunnen doen.
Relatedness	Ik denk dat ik me wel kan aanpassen, als ik wel bijvoorbeeld een huisdier zou mogen hebben.	Op een grotere schaal dan mij zelf, het soort werk dat ik zou kunnen doen (zoals in het verhaal) dat ik wel iets zou kunnen bijdragen aan mijn nabije omgeving.	Ik denk het wel. Het is vooral door de keuzes en prioriteiten die jij legt.	Ik denk wel dat de mensen die zeggen er is geen verband dat die dat zeggen dat dat een smoes is voor ons gedrag.	Denk het wel. Goede keuzes maken en de mensen om je heen beïnvloeden die daar ook aan bijdragen. Ja in het nu zou ik dat eigenlijk ook gewoon doen.	Anders dan dat ik meer duurzaam zou leven, zou ik niet bijvoorbeeld een gezicht daarin kunnen zijn of een community lijden. Maar in mijn eigen huis en netwerk daar misschien wel.	Ik zie ook wel in 15 jaar dat ik een positie heb waarin ik de visie van het bedrijf duurzamer zou kunnen maken.	Lijkt me leuk om in ontwikkelingsprojecten te kunnen financieren en hoe dat dan het meeste waarde kan creëren voor de maatschappij.	Ik denk dat iedereen een rol heeft in klimaatverandering omdat iedereens acties daar een effect op hebben.	Ik zie dat meer, zoals in het verhaal, omdat ik dan bezig ben met het collectief en de community en dus samen iets doen.	Ik denk wel dat er nu nog wel echt iets mist dat je als individu in de ontwerpwereld er wel bewust van bezig bent maar in de bedrijven wereld is dat gewoon nog heel anders.
Autonomy	ik denk dat iedere consument kan bijdragen aan klimaatverandering maar de echt grote stappen komen vanuit bedrijven en de overheid, maar dat beperkt wel je keuzes.	Ik vind het belangrijk dat mensen keuzes kunnen maken waar ze achter staan en niet geforceerd worden. Ik ga er ook vanuit dat als mensen geforceerd worden om iets te doen dat dat niet werkt en dat er heel veel chaos komt. Het idee om maar te leunen op mensen hun motivatie voor een goede wereld is wel moeilijk	Hoe concreter de problemen hoe concreter de oplossing. Dan kan je gewoon niet halve oplossingen bedenken. Als je echt een verschil wilt maken moet je concreet werk doen. Nu is het voorkomen en dan is het genezen en dat is veel praktischer.	Dus ik zou wel een bepaald level van controle zou willen vanuit de overheid want ik vertrouw niet echt op de maatschappij dus dan lever ik liever zelf een stukje vrijheid in.	Nou vind ik wel dat mensen bewust moeten worden dus bijv via educatie maar de keuze moet wel bij het individu komen. Maar ik vind wel dat de overheid bijvoorbeeld met belastingen of eisen aan huizen zou stellen	Op dit moment zou ik niet weten hoe ik dat zou moeten doen (dan misschien wel) hoe je moet handelen of wat je moet doen of wat kan je eigenlijk doen, zou ik liever kiezen voor iets anders	Beleid maken duurt heel lang dus over 15 jaar denk ik wel dat het nog een grote rol heeft	Ik denk dat als we zo doorgaan dat er dan wel restricties gaan komen. Hoe erger dingen worden hoe minder vrijheid je hebt	Ik denk dat het wel nodig is dat dat gestuurd wordt omdat het een probleem is wat het individu overstijgt dus je kan het ook niet aan het individu overlaten.	Ja ik denk dat ik wel nog de ruimte ga hebben. Voor mij voelt deze toekomst wel realistisch en dichtbij.	Voor een groot deel zullen we geforceerd worden door de natuur voor bepaald gedrag. Maar kleinere dingen, ik denk dat er wel meer druk vanuit de samenleving komt en vanuit de overheid om bepaalde dingen te doen

Overview of large, detailed simplified and cleaned.

P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11
Competence										
I am trying to improve things, but to make more impact I think I need to have more money.	I think I can do something, but I doubt if it would make a difference.	I see the urgency of acting. I am aware that I should do that more often.	Yes but I want to alleviate the consequences rather dealing with the consequences.	Probably, but I do not want to change everything.	I could use less materials.	I think I can do something.	I cannot afford alternatives.	I can make small changes.	Yes, mainly by actions that do not cost too much effort such as voting.	I think I could educate myself more in what I could do.
Relatedness										
I think I can adjust myself to the circumstances.	I think I can contribute to my own environment.	I think so, especially in my priorities.	I think that people who say that there is no connection between humans and climate change use that as an excuse.	I can make better choices and influence people around me.	I could live more sustainable and help my own environment in this.	In 15 years I will have a position to make the vision of a company more sustainable.	I think it would be nice to help and fund projects for the society.	I think everyone has a role in climate change.	I think I collectively would like to take action.	I think there is something lacking in the awareness in our society.
Autonomy										
I think everyone can contribute but the govenrment can make the most impact.	I think it is important that people are free to make their own decisions and that forcing anyone will not work. But how would people be motivated?	The change can be made if the problem is concrete.	I do not trust the society, so the government should have some controle.	I think the government should have some control, but people should also be free.	At this moment I would not know what to do or how to act.	Policy making takes a lot of time. So I think that in 15 years this is still needed in 15 years.	I think if we continue like this there we will be less free. The worser things get the less freedom you have.	I think it is necessary to because the problem is bigger than the individual.	I think that there will be room for me to live in this future.	Nature will force us into a certain behaviour. But society will also pressure the government to take action.

Clustered data based on constructs of SDT



K. Data analysis: Overview of quotes related to future self

P1	En ook interessant om andere informatie te krijgen over wat het betekent voor de mensheid	Interessant, daar denk ik al wel over na, maar ik gebruik vooral de wereld van nu maar dan meezelf ouder zie en niet de wereld ook ouder laat worden	De uitdaging van waar wil je leven vind ik lastig	Raar om voor te stellen dat je AL 40 bent maar ook PAS 40, maar de wereld is dan al heel anders, dus dat was wel confronterend	Ik denk het wel. Als ik normaal over de toekomst nadenk wat ik al eerder zei dat alleen ik ouder ben in de huidige wereld	Ik denk dat dit een erg realistisch beeld kan zijn en dat je beter kan begrijpen wat de impact is op dagelijks leven dan wanneer je zegt dat de ijskappen smelten.				
P2	Het was wel boeiend om mijzelf te verplaatsen in het verhaal. Want er was een link tussen wat ik heb ingevuld en het verhaal wat verteld werd dus ik ging mij er wel in verplaatsen en bedenken wat zou ik doen	Toen het over de persoonlijke vragen ging en het ging over de baan of community project en toen wilde ik wel een baan en toen kneeg ik de voorbeelden en daar kon ik niet mijn ideeën n kwijt kon	Het was wel interessant, de locatie vond ik interessant want ik denk daar niet heel erg over na vanuit het perspectief van het klimaat en hoe dat mijn leven beïnvloed.	Dus ik kan me wel voorstellen dat het klimaat een bepaalde macht gaat hebben in je leven en dat is momenteel nog niet	Het voelt nog steeds wel aan alsof ik fictie aan het lezen ben die wel overeenkomsten met mij heeft, maar eigenlijk versimpeld is. Maar het past wel, want je vertelt een verhaal en daarbij kan je niet alles in meenemen in de wereld.	Dat vond ik wel moeilijk want ik was wel redelijk overtuigd dat klimaatverandering speelt, maar ik vond het alsnog moeilijk om te kijken naar mijn eigen bijdrage	Tijdens het verhaal vond ik het wel gaaf om te zien wat voor bijdrage ik in de toekomst kan bijdragen. Ik zie wel concreter wat een individu in de toekomst kan bijdragen maar ik vind het lastig om dat te vertalen naar het nu.	Het verhaal doet wel iets aan het beeld, het is nog steeds moeilijk. Het idee van dat dit in mijn stad zou kunnen gebeuren dat mijn wereldbeeld en ervaring te combineren zijn met nieuwe en veranderende factoren, toen kon ik het me wel voorstellen	
P3	Ik vond het wel erg interessant, een leuk gedachten experiment dat de gevaren heel realistisch worden en ze doorgaan zo ervaren kunnen worden. Het is nooit echt concreet hoe normaal temperatuur grafieken worden gepresenteerd.	Confronterend, O moet ik hier nou over nadenken over hoe ik ga wonen. Over 15 jaar ben ik 40 en dacht ik wel van o shit.	Je bent er wel mee bezig maar nooit zo concrete zoals waar wil ik wonen. Dat was wel een stap verder dan hoe ik normaal denk	. Hoe ik mijn tijd besteed en hoe laat ik opsta daarvan dacht ik dat zie ik dan wel. Wat een beetje logisch klonk, die vragen waren minder confronterend.	Ja ik was een beetje in de war, ik dacht dat ik er Sam dit verhaal weren maar daarna werd het logisch dat Sam een soort van mij was	Je hoopt dan toch dat deze situatie niet werkelijkheid gaat worden want dat lijkt me niet zo fijf. Ik denk dan wel van wat kan ik doen en wat heb ik voor impact	Dan denk je na zo'n verhaal van misschien moet ik toch een extra stapje zetten in duurzaamheid. Het zet het wel in perspectief.	Je had het over polen maar ik heb geen hoofcoorts en bijvoorbeeld de warme stad. Ik realiseerde me wel dat ik daar eigenlijk al meer over wist (in het nu) dus dat ik misschien toch iets kritischer naar mezelf moet kijken	Al ben jaar wordt er gezegd dat het 'erger' gaat worden, het is constant om je heen en niet incidenteel. Zo'n verhaal denkt al 15 jaar verder waardoor je wel een bepaalde confrontatie krijgt met de toekomst in plaats van dat het er continue is.
P4	Format was heel erg nice. Het leek een beetje een verhaal spel net zoals in van die apps. Dat format hielt me nieuwsgierig	Is er in 2038 niet meer innovatie m.b.t. overstromingen. Ik kom kom uit Flevoland dus we kunnen al heel veel met dijken enz. Dus het probleem was iets minder realistisch.	Het voelde meer als nu in plaats van in de toekomst ook al zaten er wel elementen in met de toekomst	Ik doe dat eigenlijk al best veel. Ik vond het wel lastig want je hebt gelimiteerde opties (wat ik begrijp).	Wel leuk om over na te denken maar ik kon er niet heel ver voorbij denken.	Het was wel duidelijk dat door mijn keuzes Sam werd aanbevolen. Het gaf wel een mooi scenario zonder dat je zelf echt een scenario aan het bouwen bent.		Ik denk dat dit me wel anders heeft laten nadenken. Dat wil zeggen dat het wel heel specifiek ging over overstromingen. Als de toekomst nog steeds zo onzeker is dan zou ik wel zorgen dat ik daar beter in zou kunnen leven.	Het maakt het concreter en voelt het dichterbij.	Ja maar hier was de connectie echt veel duidelijker dan smeltend ijs.
P5	Ik vond het nice dat je keuzes kon maken. Ik vond het interessant	Ik had graag de indicatie willen zien dat dat zou laten zien dat dat echt over 15 jaar zou zijn.	Ik werd niet vrolijk van het scenario.	Ik vind het zelf moeilijk om na te denken over de toekomst. Soms heb ik maar wat gaantwoord maar niet met 100% overtuiging over dat dat mijn leven gaat worden		Er miste een transitie naar die maatschappij. Vooral dat dilemma of je naar huis of werken, nu zou iedereen naar huis mogen gaan		Ik denk niet dat het voelde alsof het mijn toekomst was. Er zaten wel interessante dingen in waarvan ik dacht oh dit is wel heftig, maar ik identificeerde me niet heel erg met het karakter	Er werden weinig gedachtes en gevoelens beschreven dus het miste wat menselijk
P6	Nou toen ik het had gelezen had ik wel het gevoel van wow heftig aan het einde	Mijn leeftijd vond ik wel raar dat ik zo oud ben over 15 jaar.	Ik zou normaal denken over huisje boompje beestje en vergelijken met wat mijn ouders hadden op die leeftijd. Ik beseffe wel wat zij hadden dat ik dat waarschijnlijk niet ga hebben en dat de wereld dan anders is	Ik had gekozen voor een huis in de stad. En dat daar juist specifiek heatwaves zijn vond ik wel confronterend. Want ik wilde graag in de stad en niet 'weg' van het 'leven'. Maar als dit de toekomst is dan moet ik er wel over nadenken of dit wel hairdig is.	Ik vond dat wel enigszins fijn. Maar Sam had wel veel verantwoordelijkheid in de banen. Maar dat geeft me wel een beeld van wat er kan gebeuren als ik kies voor de dingen die ik nu zou kiezen			Je weet wat beter wat je te wachten staat misschien	Misschien had ik het niet goed gelezen, maar eerst dacht ik dat het verhaal over mij ging. Maar ik las wel weer dat er nieuwe namen bij kwamen dus was het toch niet mijn verhaal.	Dit verhaal heeft ook als doeleinde om het waar te schuwen. Dit creëert meer empathie denk ik
P7	Het begon even met schetsen hoe ik mezelf zie in 15 jaar. Was wel grappig om na te denken daarover. De woning vond ik wat lastiger om over na te denken. Ik weet niet zo goed hoeveel er anders is	En toen dacht ik ja er zijn binnen 15 jaar geen overstromingen die zo vaker komen en ik denk niet dat er een overstromingsteam zal zijn nodig.	Ik vind het wel leuk om daarover na te denken.	Aan de ene kant waren er gelijkenissen, maar het karakter werd niet echt gedefinieerd. Dus het was wat oppervlakkig soms. Het gaf wel een beeld maar omdat de situatie radicaal is volgens mij vond ik het lastig om dat ook daadwerkelijk te zien gebeuren en dus voelde meer aan als fictie.	Ik denk het niet heel erg eigenlijk. Op het gebied van duurzaamheid ben ik al een beetje er mee bezig.	Dit verhaal van 2038 dat heeft niet zo heel veel persoonlijke relevantie omdat het te radicaal is	En ik denk dat het in Nederland niet zo heftig is en dat het in andere landen dichterbij de ervenaar daar meer last van hebben want Nederland is welvarend.	Op mij persoonlijk is het minder relevant omdat het in NL gewoon minder speelt	
P8	Er waren een aantal dingen die ik niet had verwacht zoals een pollen wind storm.	Ik denk dat ik meer kan denken over een beleidsperspectief	Ik denk zelf meer na over proactieve beroepen om het te voorkomen	Ik vond het wel interessant om het maatschappelijke deel te zien dat een community bijvoorbeeld belangrijk is. Je ziet nu al dat mensen er mee bezig zijn en minder individualistisch moeten worden.	hoe je huis in elkaar zit dat dat belangrijke stappen zijn om na te denken over de toekomst. Dan moet je wel op lange termijn denken		Ik zou in Nederland blijven wonen omdat het waar hier waarschijnlijk minder extreem zal worden.	Op dit moment voelde het verhaal niet heel persoonlijk relevant, maar het laat me wel denken. Ik denk dat ik er wel iets pro-actiever door ga worden. Maar niet op korte termijn (tot dat ik een baan heb).	
P9	Ik vond het dystopisch. Wel leuk dat je veel keuzes kreeg aan het begin	Ik vond het een beetje verwarrend, want de vragen pasten zich aan mij maar het was een verhaal over een ander persoon.	er stond wel 'your children' dus ik wist niet of	Ik dacht wel, oei dan ben ik 40, dat is wel oud. Dus dat voelde wel als erg ver weg.	Sommige dingen kon ik wel makkelijk beantwoorden maar soms was het ook moeilijk zoals waar ik zou willen wonen en of ik een huisdier heb. Sommige dingen had ik al vaker over nagedacht zoals woon ik alleen en woon ik in de stad of niet, maar blijft wel lastig.	Ik vond het wel interessant. Het was wel heel erg dat ik erin werd gegooid. De context was soms een beetje lastig dus de transitie naar deze toekomst.	Ik was in de war of het wel of niet over mij ging. Het was ook eerst een verhaal en daarna moest ik keuzes maken. Maar ik kon me er wel in inleven, dat wel. Maar dat was vooral denk ik door het maken van de keuzes, de keuzes in het verhaal en wat ik zou doen in de situatie	Aan het begin werd ik geforceerd om na te denken over mijn eigen toekomst, maar daarnaast zou ik eerder zeggen dat het me heeft laten nadenken over 'een' toekomst	Het verhaal voelde wel wat meer persoonlijk relevant. Vooral als er zou staan 'dit is gebaseerd op zoveel graden opwarming' Dan zou dit een verhaal uit de toekomst kunnen zijn en zou het wel duidelijker en persoonlijker zijn. Omdat je kan nadenken over wat je in die toekomst zou kunnen doen en dus de toekomst een beetje leren kennen
P10	Super leuk verhaal, super leuk om eigen keuzes te maken. Het voelt wel als een spel, die had je vroeger ook. Ik vond dat het ook wel persoonlijk voelde	In het begin vroeg je ook echt persoonlijke dingen zoals leeftijd en ik ging me ook inbeelden dat ik in een appartement ging wonen. Dus dat hielp wel met het inbeelden met hoe dat in Eindhoven er bijvoorbeeld uit gaat zien.	Wel confronterend of je bijvoorbeeld gaat samenwonen of niet. Niet hinderlijk ofzo. Maar de keuzes staan natuurlijk ook niet vast maar ik ga er wel meer over nadenken of iets dieper of zo. In je dagelijks leven is dat meer onbewust.	Ik herkende de vergelijking dus dat bracht het wel wat dichterbij mezelf dus dat hielp wel met inbeelden.	Maar tijdens het verhaal zat ik er helemaal in dus het leek ook of ik Sams beslissingen moest maken. Ik wist niet zo goed wat de grens tussen mij en sam was. De overgang ging wel soepel want eerst leek het meer een gesprek maar toen het verhaal kwam en het spannender werd vergat ik soms dat het verhaal aan mij verteld werd.	Ik denk dat het het concreter gemaakt. Ik galoof wel dat dit een plausible future is want we hebben nu al heat waves in de steden	Het doet me wel realiseren dat ik in zo'n toekomst terecht kan komen dus dat brengt het dichterbij maar dat vind ik niet zo'n fijn gevoel	Dus ja het verhaal bracht het wel dichterbij maar dat is wel confronterend.	Als ik ze afweeg tegen elkaar dan voelt het nieuws relevanter dan het verhaal omdat het nieuws in het nu is en ook omdat het weteschappelijk bewezen is en het verhaal voelde wat meer fictief.
P11	Vrij extreem, ik kan het me nu niet voorstellen dat dit nu kan gebeuren maar wel in de toekomst.	Maar dat alles goed vast moet zitten tijdens extremer weer is ook best logisch. We zijn nu best bezig met energie enzo maar misschien zijn er dus meer dingen nodig waar we ons nog niet bewust van zijn	Dus als ik denk aan de toekomst weet ik niet of dat zo gaat zijn, dat ik bijvoorbeeld een community vorm met mijn eigen familie en vrienden.	Ik kon ze best makkelijk beantwoorden omdat ik het best een goed beeld heb van mijn toekomst.	Je baseert het op wat je nu om je heen ziet van mensen die ouder zijn. Je hebt al best een beeld maar dat is wel beperkt door wat je al kent dus ik kon ze misschien iets te snel antwoorden dus misschien dacht ik er niet kritisch genoeg over na.	Je ging gewoon nadenken over hoe ik met dingen om zou gaan omdat het verhaal dezelfde waardes had.	Het nieuws voelt gewoon verweg. Het is niet in je eigen omgeving. Hoe dichterbij dat komt hoe relevanter het gaat worden	het verhaal is het wat kleiner en persoonlijker. Als jij een flimpje ziet van heel veel mensen dan denk je oh heel heftig maar daar verplaats ik me dan niet in en dat is bij zon verhaal wel	

L. Results and discussion on other findings of this project

Attitude

Attitude was evaluated by evaluating the risk perception which was done by looking at the beliefs in global climate change constructed in three separate topics.

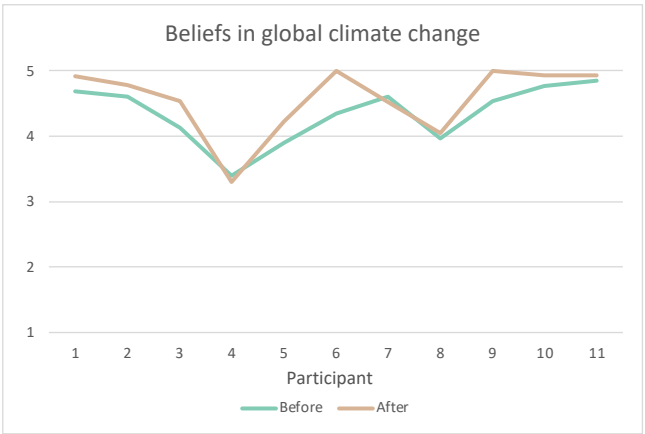


Figure 1: out of 11 participants, 8 increased, 1 unchanged and 2 decreased in their perception.

Taking the average of these three constructs 8 participants had a stronger belief that global climate change was happening and 3 participants did not change in their beliefs after the interaction with the research probe.

The qualitative data is used to elaborate on this effect. First, the participants who had an increased belief, for example, P1 mentioned that the provided scenario helped to think about how climate change affects humanity. Related to this, P3 expressed that the scenario made climate change more tangible. P6 and P10 both related their answer to the current weather and that the scenario made them realise that the future is closed than they expected. Not all participants who had an increased score in the quantitative data expressed this during the interview. For example, P5 and P9 both expressed that they felt that the scenario was not realistic. Participants who their opinion remained unchanged shared the opinion of P5 and P9, where one participant in particular acknowledged climate change, but assumed that in the Netherlands the weather would be less extreme.

Intention

Intention was evaluated by the willingness to act or intention to act.

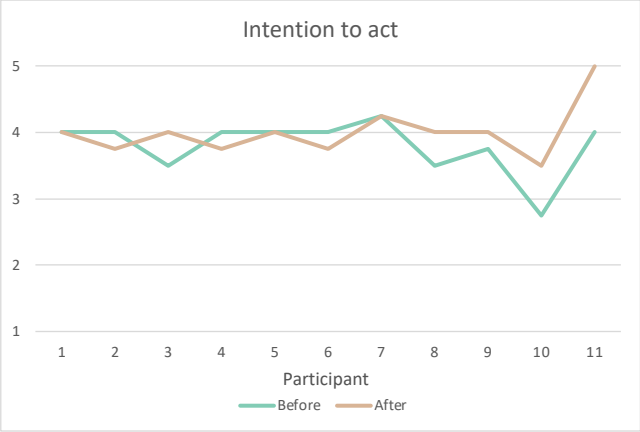


Figure 2: out of 11 participants, 5 increased, 3 unchanged and 3 decreased in their perception.

The answers in the interview did not always align with the quantitative data. For example P6 had a decreased intention to act, but mentioned that if they had concrete alternative they would be willing to act. Two other participants with a decreased intention mentioned that they both did not know how to make an impact. Three participants with an increased intention mentioned concrete examples of what they could do such as using the train more often. P5 had an unchanged intention and scored 4 points on the scale mentioned that they did not want to change anything extra anymore.

Motivation

Motivation was not measured in the quantitative data but only in the interview using the Self-Determination Theory (Gagné and Deci, 2005).

The interview parts related to the SDT were analysed using a deductive strategy (Caulfield, 2022). The components of the SDT were used as theme. In every theme an inductive analysis was done to find clusters (Appendix #).

Competence

Four clusters were found within the theme competence. Most participants expressed that they felt competent to change their behaviour, e.g., by creating awareness in their environment (P11) or reducing in fashion consumption. However, some participants expressed that they did not have the financial circumstances to really make a difference. Participants also relied on the government to take action first. P1 mentioned that their role in climate change would depend on what the government would do first. Lastly, participants expressed that they did not know what to do and doubted if it would matter if they did anything.

Relatedness

Similar to what has been found in the previous theme, not knowing what to do was a cluster within relatedness. P3 expressed that compared to others it is difficult to see how well you are doing and what the effect of their footprint is in comparison to a company. Some participants did reflect on their personal role and felt most effective by inspiring their own environment. Another cluster is about communities. P1 mentioned that if the scenario would become reality, they hope to be living in a community. Lastly, participants mentioned that through work they could deliver the most value. P10 mentioned that through governmental work they would like to make an impact to alleviate negative consequences of GCC.

Autonomy

Within autonomy two clusters were defined. First, freedom was important for a few participants. P5 expressed that there should be enough room to decide how you would want to contribute to GCC. Second, the participants expresses that governmental institutes or other organisations should take action first before they could make an impact. P9 expresses that the government should make rules but that society also should take initiative to motivate organisations to take action. P11 mentioned that nature will also force humans into a specific behaviour.

Self-efficacy

Self-efficacy was evaluated in the quantitative data. In the interview self-efficacy was evaluated throughout the interview.

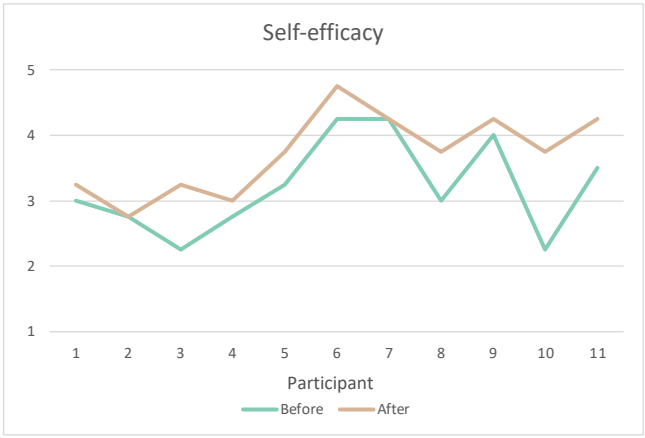


Figure 3: out of 11 participants, 9 increased, 2 unchanged and 0 decreased in their perception.

As Figure # shows, almost all participants increased in their self-efficacy after the interaction with the research probe. In the qualitative data most participants express how they as an individual can contribute. P8, who has an increased self-efficacy expresses that change only can be made through the government. P7 had an unchanged self-efficacy but expressed in the interview that every individual can contribute. Only P2 mentioned that they did not know how to contribute to GCC.

Self-efficacy was also used as a theme for the deductive analysis. Four clusters were found. The first cluster found that participants struggled with their individual effort. P10 mentioned that there is a friction between individual contribution and the impact of organisations. Secondly, the power of community is mentioned. P8 mentioned that people should become less individualistic. Some participants also feel that through work they can make an influence. Lastly,

participants believe that they can have an impact and create more awareness about GCC in their own environment.

Post-questions

Most participants expressed that they did think about the future after the study. However, this was often unrelated to climate change and focused on work and living situation. Almost all participants did not change anything in their behaviour.

DISCUSSION

The outcomes of this research have provided many insights in what the effect of creating a future self is on the perceived personal relevance in climate change scenarios. The results show that this research project has not only found insights in what the effect is, but also already puts the effect in action which allows for possibilities for future research. To discuss what the effect of creating a future self is on the perceived personal relevance in climate change all the different constructs that make perceived personal relevance will be discussed. In this section the findings, implications, limitations and recommendations will be discussed.

Attitude

The results show that there has been an effect on the attitude of participants. For eight participants their risk perception was increased about global climate change. Participants mentioned that the scenario was a wake-up call or supported them in realizing how climate change effects humanity. However, for three participants the quantitative data shows that there was no change in their perception of global climate change. For some participants the scenario was relatable and realistic, causing the effect of awareness. However, for some participants the scenario felt extreme which might cause a lower score on the perception of consequences. Scannell and Gifford (2013) found that an optimistic framing of GCC messages might be more effective than negative portrayed messages. The finding shows that even if the message is not completely optimistic, it can still be effective.

Effectivity shows on a longer period which was out of the scope of this research. However, in the post research questions many participants argued that they did not think about the future of climate change. This could indicate that even though there was an attitude change, the effectivity of this change is low in the short-term.

Motivation

Motivation was evaluated by using the three components of the SDT (Gagné and Deci, 2005). Even though participants expressed to feel competent to make changes in their lifestyle, they often mentioned that they did not have the finances to do so or felt powerless against polluting organisations and felt the need for the government to act first. The component of relatedness was expressed by participants that they had a hard know knowing what they could do. The participants who knew what to do often mentioned that they could create more awareness in their environment showing a sense of being needed for this change. When evaluating autonomy, it became clear that this was most difficult for participants. Participants valued to be free to make their own decisions, while other participants expressed to expect the government to take action.

These findings illustrate that motivation related to climate change is difficult to influence. Even though participants mentioned to feel competent to take action follow-up questions often result in not knowing what to do or not knowing if their action will have an influence.

Intention

Intention was evaluated by looking into the willingness to act. Intention to act in the quantitative data had the most variety. Similar to what has been discussed for motivation, participants struggle with knowing how to act or what to do. P2 mentioned that in the future they would know how to act, but not how this would translate to the present. This is an interesting insight as it shows that the scenario provided the opportunity to see yourself living in the future, but lacked in terms of providing knowledge on what a participant could do now.

Additionally, there was a mismatch between the qualitative and quantitative data. For a few participants the intention to act increased or decreased in the quantitative data, while the qualitative data showed the opposite effect.

Self-efficacy

The fact that nine participants increased their self-efficacy in the quantitative data was surprising as it communicates that they have a higher sense of how their individual behaviour affects effects of global climate change. However, in the interviews, participants also often expressed that they did not know if their contribution would influence global climate change which is contradictive with the questionnaire results. One explanation for this could be that the other interview questions had them reflecting on what impact they could make. Therefore, the quantitative results on self-efficacy are hard to match with the qualitative results. This could also relate to the intention-behaviour gap where participants plan to make a change, but the action to do it is harder than they expected.

Perceived personal relevance

Perceived personal relevance was indirectly measured by different constructs. The different constructs are explained in the sections above. Within each construct there was an effect, positive and negative. As within all the constructs there was an effect, and all the constructs relate to perceived personal relevance it is plausible to say that the research probe influenced the perceived personal relevance. Statements during the interview e.g. that it showed the effect of GCC on human lives also confirm the effect on the personal relevance.