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'I Believe in That Version of the Future'. Cli-Fi and Design Fictions as Dialogical Frameworks for Expert Engagements

Lizette Reitsma*, Stina Wessman, Elin Önnevall

Research Institutes of Sweden, RISE Interactive
*Corresponding author email: lizette.reitsma@ri.se

Abstract: The Design for Sustainability community has highlighted the importance of engaging different societal stakeholders and experts in discussions of how to achieve sustainability.
The work we present is situated within a research project exploring 'How climate goals can be portrayed to explore individual's' carbon footprint'.
In this paper we present a dialogical tool to engage experts in the discussion of issues related to moral, ethical and societal aspects in the transition towards a low emission society.
We created two stories that were used during a workshop with experts. Those stories are positioned within the Climate Fiction genre, which centres on man-made climate change. We shaped the stories as Design Fictions, a design approach focusing on sparking discussions and explore possible worlds.
The stories facilitated discussions on the aspects that we aimed for. We see potential in this approach to facilitate expert involvement and we highlight opportunities and improvement-potential.

Keywords: Climate Fiction, Design Fiction, Design Tool, Expert Engagements, Design for Sustainability

1. Introduction

Achieving sustainability can be described as a wicked problem, with no agreed upon solution (Buchanan, 1992 & Rittel 1973). In order to explore this challenge, international research efforts have experimented with various change strategies for more than a decade (see Froelich (2010) for an overview). Examples of such strategies are, raising awareness (Gustafsson & Gyllenswärd 2005) and providing information (Broms et al. 2010). Many of the strategies that focus mainly on the individual have been criticized as being inefficient. This has to do with a variety of factors. Firstly, besides individuals, also other stakeholders and experts, such as governments, the commercial sector and the industry, need to be addressed (DiSalvo, Sengers, & Brynjarsdóttir, 2010; Dourish, 2010; Power & Mont 2010). Secondly, the emphasis on sustainability issues with limited impact has proven less

efficient (Power & Monts, 2010), because it enhances the risk of losing perspective of the broader issues of achieving sustainability. We acknowledge these shortcomings and we build upon the need to involve other stakeholders and experts in the discussion to reach impact.

We created a dialogical space as a potential tool, firstly, for being inclusive to different stakeholders and experts and, secondly, to invite discussion on what broad implications would be needed to achieve “true sustainability” (Power & Mont, 2010). In order to reach a dialogical space, the conversation material has to be easy to engage with, envision and reflect on. For this, we consider the use of narratives and stories to explore sustainable futures, as suitable. As stated by Kearney (2002), telling stories is as basic to human beings as eating.

The purpose of the research project for which we created the stories is to explore ‘How climate goals can be portrayed to explore the individual's’ carbon footprint’. The project aims to make detailed CO2 data accessible and display how it relates to climate goals for 2020. Because of the complexity of this project, we involved a wide variety of experts through interviews with competences such as life cycle assessment, climate research, policy making, and big data. From these, we found topics and issues that we wanted to focus on, on a more ethical, moral and societal level in order to provide richness for the design phase of our research project (see Figure 1 for a project overview). We synthesized our shared understandings of the interviews by transforming them into fictions that presented visions of a low emission society. Those fictions were used during a workshop with our group of experts. Through the fictions, we aimed to spark a reflective discussion on what a low emission society could be like and to facilitate deeper discussions on moral, ethical and societal issues that were pointed out during interviews. In this paper we introduce the fictions that we used during the workshop, what we based them on, how we used them and what kind of discussions they resulted in. From this, we reflect on the usefulness of such stories as dialogical spaces to facilitate expert engagements.

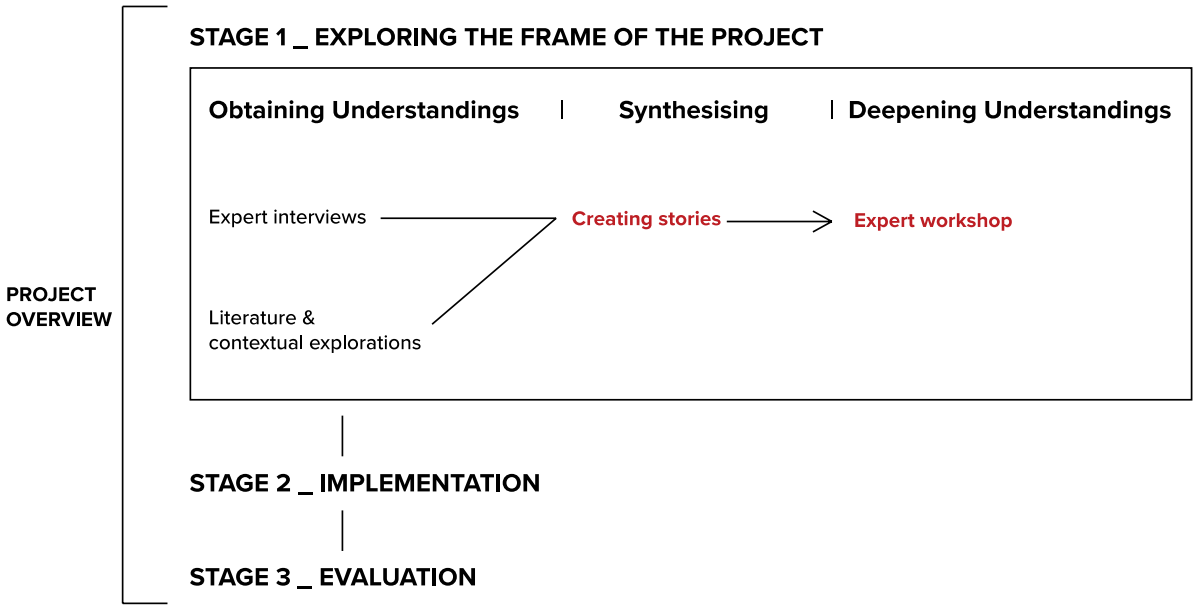

Figure 1. Project overview. In red: the parts that are the focus of this paper.

2. Background

Climate fiction or Cli-Fi came into use in the late 2000s as a fictional literature genre dealing with man-made climate change (Bloom, 2016). It is related to Science Fiction (Sci-Fi), in that it presents possible scenarios for the (near) future. Whereas Sci-Fi often has a technology focus, within Cli-Fi, climate change, global warming and effects on human life are central (Bloom, 2016). The genre elaborates on the implications of climate change and what it could result in, in the future. The role of Cli-Fi is thereby to support re-imagination and to engage readers in climate change (Szabo, 2015). Though the use of plot, place and character development, climate change can become more personal thereby becoming more engaging (Gulliksson, 2015). Cli-Fi tends to be dystopic and apocalyptic and narrates what it will be like if we don't stop climate change. We believe that by emphasizing too much on Cli-Fi stories as such doom scenarios; feelings of hopelessness by the audience are enforced. Rather, the role of Cli-Fi, from our point of view, is about exploring how those Cli-Fi's can become inspirations and explorations on how to transition towards a more sustainable society. By looking at the role of Cli-Fi stories from this more optimistic perspective, we can see great potential for those stories as focus points to facilitate space for reflection and discussion.

Design Fiction is an intertwining of a design approach with an author's approach (Sterling, 2005). As stated by Sterling: "Design is a method of action. Literature is a method of meaning and feeling" (Sterling, 2009). Design Fictions address 'possible worlds'. Those possible worlds can either be close to reality and easy to imagine from our real world, or they can be far out and difficult to imagine from what we know. Because of this, there is space for both utopian and dystopian perspectives (Markussen & Knutz, 2013). Rather than just a creative technique to obtain inspiration, such as Sterling (2005) has suggested, Design Fictions can also be seen as method for research through design (Grand & Wiedmer, 2010). By looking at design fiction in this way, obtaining valid knowledge in design and science becomes central to it.

Design Fictions are, like Dunne and Raby (2013:51) said, not to show how things will be, but to open up space for discussion. Through such an approach, they become dialogical spaces. In these spaces, joint inquiry is central (Steen, 2013). Following Dewey's notion of joint inquiry (1938), it brings people together so that they can jointly explore, try out, learn, and evaluate possible solutions and bring about change in a desired direction. Such an approach centers on appreciating the perspectives of others (Wright & McCarthy, 2008). The fact that everyone will have different perspectives supports and strengthens the inquiry.

Scenarios, as stated by Blythe (2014), have been used by designers for a long time as discussion generation tools. However, what distinguishes Design Fictions from scenarios is its focus on possible worlds "makes it natural for the designer to add social and political conflict to the scenario sketches" (Gulliksson, 2015:185). Furthermore, it prioritizes what a character feels about the situation over what is happening, unlike a scenario, thereby making them easier to emotionally engage in.

3. Method

What we required from the Design Fictions for this specific purpose was that they would 1) look into different aspects of that future such as: socioeconomic status, housing, transport and food; 2) be engaging, in order for the experts to emphatically reflect on what it would feel like to live that life; 3) Be short because they had to be read out during the workshop; 4) Easy to understand for the experts to be able to get a quick insight into that future and shape an opinion.

We looked into literature approaches, in order to find one that fitted our needs. We found sketch stories as the type of short story that would fit best to our needs (Herman et al., 2013: 134). They are fragments: it focuses on describing impressions of people or places. A sketch story is informal in style. By using a chatty and familiar tone, the writer plays down the major points and suggestions instead of stating conclusions. Through this, a sketch story invites the audience to imagine what came before or what will follow after.

The sketch stories were created using knowledge gained from ten expert interviews. We decided to create two stories instead of one in order to differentiate them during the discussions and make it easier to reflect around them. These were based upon two different paths towards a low emission society. One of the sketch stories focuses on a future in which, in order to meet the necessary reduction of CO2e, a 'simple lifestyle' path is central (Håkansson and Sengers, 2013). In this path, a totalitarian governmental approach and a carbon budget are the core. The second scenario is a technology driven solution, in which the necessary reduction was reached through technological innovation with a 'bright green' path (Woodruff, Hasbrouck and Augustin, 2008). The stories follow the same storyline and are constructed the same way in two parts. In the first part, Part one, the focus lies on what living, food, transport and the socioeconomic aspects that build up the everyday life in 2060 look like. In Part two, the aspects and sacrifices that made Part one reality are back casted. We constructed the stories in this way in order to facilitate a dynamic discussion between the future and today. In the simple living story we introduced the carbon budget, which we considered important for the experts to experience, in order for them to reflect on and react upon. It is for this reason that we created a carbon budget coffee break experience: during the workshop all products that we offered contained carbon footprint labels. On these labels we put the real price, the carbon price and the source of the carbon price. We gave everyone fake money with which they could buy the products (Figure 2).
Four experts, with different expertise, took part in this workshop: One expert on building related life cycle assessment (LCA) and one expert on food related LCA, an industrial designer/sustainability consultant and someone from a local government in charge of the sustainability policies within that municipality. During the workshop we read the two stories for the workshop participants and asked them to listen. We gave them post-it notes to write comments on and after the reading we gave them a printout of the stories. After the stories were read, we opened up for discussion and asked the experts how they related to the stories.

We will now present the two stories, which formed the backbone of the workshop.

Figure 2. Exploring the concept of Carbon Budget during the Coffee break.

3.1 Back to nature

I was standing in my rooftop garden. I had agreed to meet the little girl from next door. For school she had to interview people who had known the world before the great turn. There she was. She gave me a handful of potatoes. 'Mum asked me to give that to you and to ask you whether she could get some lettuce from your plot', she explained. We sat down in the shade and she started. Can you tell 'What are the biggest differences with how we are living now?', she asked. I smiled, where to start, there are so many differences. 'On days like this, when I was your age, my friends and I would lay on our backs in the grass. We would stare at the sky and count the airplane stripes.' The girl and I looked at the sky. Obviously, there were no stripes now, as all air travel was banned. I continued: 'nobody really had a clue where his or her food came from. It was all produced somewhere else. People would eat meat, often at least once a day. The streets were filled with cars. Now it is hard to find a road where cars are actually allowed. And people would buy products constantly and aimed to have everything. Can you imagine? The idea of product libraries - where you can borrow a drill, or all those other things that you only use once every now and then – did not exist. Everyone just had his or her own copy of everything. And the houses, and space that people had…not just the 10 square meter that we have now per person. Another drastic difference was that people were allowed to have more than one child. Oh, it was completely different! I must say that I do miss my freedom. The luxury of traveling... of living a beyond local life… Not that I don't like my life now. I feel really connected to everyone living in our building. Before the great turn towards nature people hardly knew their neighbours. Now we support each other… There is no need to be lonely.'

'It is not that this all changed from one day to the other. After the Paris Summit in 2015, governments had agreed to take action. But unfortunately those words did not mean anything until 2017. That year, we started to really feel what this climate change meant. We knew that if nothing happened, we would not survive. Governments introduced the CO2 credit. Anyone who would go

over his or her budget would have to pay a fine. Of course this did not work. People would just be selling their budget for enormous amounts of money. Then the government started punishing high emissioners with imprisonment. That was a cruel time, people were so afraid. The next step was that those who emitted too much would be cut off from the grid. You cannot imagine the shame people felt when they were cut off. Everyone could see that you had lived above your credit. I think that is when the great turn truly became a fact. The new living, traveling and eating laws were introduced. I think this is when the human race again acknowledged nature and gave her back her place in the centre of the world. The goal of near zero emissions in 2050 became a reality.'

3.2 Technocratic Future

I was standing on my porch. I had agreed to meet the little girl from next door. For school she had to interview people who had known the world before the great turn. She stepped out of the automated public car and there she was. The automated public transport definitely made living outside the city more convenient. She gives me a piece of in-vitro meat. 'Mum asked me to bring you this.' We sat down on the terrace facing the water. 'Would you like some oranges or a glass of strawberry juice?' – 'Both would be nice. I don't get either so often from mum since we don't have so many plants ourselves yet.' I pick the oranges from my greenhouse and put them on a plate. The little girl is eager to start. Can you tell 'What are the biggest differences with how we are living now?'. Oh wow what a question, 'On days like this, when I was your age, my friends and I would lay on our backs in the grass. We would stare at the sky and count one or two airplane stripes.' The girl and I looked at the sky. Obviously, the sky is completely striped now, as all air travel grew exponentially when fuel became 120% environmentally friendly and even consumed CO2 when in the air. I continued: 'nobody really had a clue where his or her food came from. It was all produced somewhere else. People would eat meat, often at least once a day but it came from animals and it was not grown as it mainly is today. The streets were filled with old gasoline cars. Now it is hard to find a car that is not part of the automated public transport. And people would buy and throw away products constantly. Can you imagine? Not being in a circular economy? The idea of constant product upgrades - where you make your drill or bicycle the best, with new components– did not exist. Everyone just had his or her own copy of everything and when a new version of the product was available, the old version would be thrown away. And the CO2 people would emit to heat up houses. It was crazy! Oh, it was different! It was a bit luxury to travel, unlike it is now - we travel all the time everywhere. I guess the only downside of our lifestyle is that we don't depend at all on each other. Technology fixes everything. I remember that I had to ask my neighbour to help me push the car to start in 2025. We supported each other when needed. It is lonelier now. It is not that this all changed from one day to the other.'

'After the Paris Summit in 2015, governments had agreed to take action. But unfortunately those words did not mean anything until 2017. That year, we started to really feel what this climate change meant. We knew that if nothing happened, we would not survive. Governments introduced huge amounts of research money to trigger more technocratic solutions towards a carbon neutral society. This worked rather well and a lot of people never really experienced a CO2e crisis. But in some countries the effects of climate change were really noticeable; people were so afraid that their house would blow away from storms. You cannot imagine the shame people felt when they realized their wasteful behaviour caused other peoples' misery. I think people are just blind when it comes to how their behaviour affects other parts of the world in a negative way. The goal of near-zero emissions in 2050 became a reality.'

4. Outcome

The Design Fictions resulted in a critical discussion about how to, or how not to achieve a low CO2e emission lifestyle and society. Below we will highlight some interesting topics from these discussions.

4.1 Responsibility and guidance

Questions like, '*Why do we do what we do?*' and '*what directs our choices?*' were discussed as something that in many cases might be outside of the individual scope. We therefore have to reflect thoroughly on which choices actually lie in the hands of individuals. It might be that governments or commercial enterprises are making the choices for them. Even though individuals would like to make certain choices, it is made difficult or impossible for them. One topic discussed was the transparency that makes it easier for people to choose, and it might be that companies hide this transparency. The 'back to nature' story in combination with the coffee break experience lead to reflections on "good" data, as it is important that you can feel that you can trust the data and that you know where the CO2e data comes from in order to make informed decisions.

4.2 Freedom of choice

Even though a totalitarian approach towards reducing carbon emissions seems to scare some of the experts, they also discussed the positive effect of having a government that can act quickly based on a set goal for everyone to live up to, including citizens. By introducing a carbon budget, we highlighted the concept of freedom of choice. By having a budget, you can decide for yourself how you choose to spend your budget. You can then prioritise the aspects in your life that you find important. However, that might imply that common features like flying, which has a very high carbon cost, has the potential to fall outside the budget, because no one will be able to afford it. This, then lead to a discussion on to which extremity we imply and can expect people to change.

4.3 Social pressure & role models

When talking about what it would feel like to share your carbon footprint information, the experts came to the conclusion that the information might be too personal to share with people outside your social circle. When reflecting on why it is too personal, the sustainability consultant said that it might be because the result might not fit with his idea about himself. "*If it is publicly shown that I am different than I want to be, it might be kind of embarrassing*".

We want what everyone else has. What was luxurious yesterday is common good today. This dynamic has large impact on society and on our carbon footprint. In order to reduce our carbon footprint, the experts argue that we need new role models and new kinds of status symbols. It might also mean to invite new types of lifestyle: "*A lifestyle that gives us greater understanding of how the ecosystem works but without denying the possibilities of technological development. I believe in that version of the future.*"

5. Discussion & Conclusions

We created Cli-Fi Design Fictions through which we aimed to engage experts in sustainability dialogues in a workshop setting. We wanted to discuss issues related to moral, ethical and societal aspects in the transition towards a low emission society. Below, we articulate our reflections on using this method in order to achieve such discussions.

5.1 Foundation for discussions

It took the experts a while to process the stories, which resulted in a slow start of the discussion. However, the stories did encourage dialogues on moral, ethical and societal aspects of a low emission society. It was especially Part two of the stories, addressing the transitions and sacrifices made to achieve and reach a low emission society that sparked deep discussions on a societal level, thereby reflecting on ethical and moral aspects of such futures. It appeared challenging to position the discussion in relation to the future and the experts all shifted their perspective to the present to articulate and position their thoughts. Specific details in the stories, that were presented in Part one of the stories, such as the one child policy and what it would mean for children to grow up without siblings were perceived by the experts as provocative and these sparked deeper personal reflections.

It seems that it was almost expected from the two stories to be either dystopian or utopian. Also having two stories was perceived as having too much information. The experts thought it was confusing to have two stories and they focussed a lot on what the differences were between the stories. The carbon budget, presented through the coffee break experience became a strong entry point for the discussion on the problematic position for consumers to have right (or any) information about the effects of their purchase. To make it easier for the participants to relate and remember specific parts, more tangible Design Fictions or supporting illustrations could support the participants in remembering the story and to relate to it more. Furthermore, the 'back to nature' story was much more generative in the discussions. It seems to be easier to reflect on the story since people in that story had an active role towards a low emission society because they had to change their habits. In the other story, technology just saved everything.

5.2 Involving experts

The discussions became very personal and the participants seemed to consider themselves more as individuals than as experts. They reasoned that strategic and political implications were needed and that there was not much for them to contribute as individuals. For us it was surprising that they mainly considered themselves as individuals within this setting as we focused on their expertise to discuss what a sustainable future could be like. However, we reflected, when people take a personal stance, they take their knowledge and expertise into account. Thus, you can never separate someone's personal view and expertise. Maybe the greatest strength of this method for expert involvement is just that, that it enables a very personal, provocative and dramatic take on sustainability, but these takes are still informed by knowledge and expertise. To emphasize the role of the experts even more in the discussion, we suggest that the stories could articulate their role and responsibility of experts even more to provoke discussions on this matter.

We consider the approach successful as a dialogical tool to discuss and reflect upon implications towards 'true sustainability' (Power and Mont, 2010). However, we believe this type of stories could be an even stronger collaborative tool. We suggest that the experts in such a case would contribute by building upon and rewriting the stories and then articulate what their role, as experts, would be towards that future. The function of the stories could then be extended as a tool to back cast societal change and policymaking.

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About the Authors:

Lizette Reitsma In her work, Lizette focuses on Design for Sustainability. Her interest lies in how design can become a tool for dialogue to address complex issues connected to sustainability. She holds a PhD in co-design and her expertise lies in research-through-design.

Stina Wessman holds an MFA in Experience Design. In her work she explores alternative energy futures through experimental objects, services and experiences. She has solid experience on how to involve end users and actors in participatory processes.

Elin Önnevall holds a Fil. Lic. in Human-Machine-Interaction and a Master in Social Anthropology. Specialties are ethnographic methods and analysis. Elin has solid experience in user-centered design and user experience. Her main interests are sustainable solutions for society, industry and people.

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