

# Democratised Future Visioning

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## ABSTRACT

Social imagination, the collective capacity to imagine a societal future, is essential to transform human governance and effectively address wicked problems communities are facing. When social imagination is deployed in citizens' assemblies in a deliberative democracy, social innovation can purposefully ignite societal transformation. How can a democratised futuring exercise guide people from speculation to visioning? With a research-through-design approach, a probe called the 'Mystery Box' has been created to evaluate methods that make imagining the future more approachable for people. Participants with various job profiles/occupancies have interacted with the Mystery Box in three group workshops. The insights reveal that the element of surprise, collaboration, using metaphors to extract values and visual expression work well for stimulating Futures Literacy. Further research can be done on methods for visioning and increasing the perceived self-efficacy of people who are new to social imagination.

## Author Keywords

Social imagination; democratic innovation; citizen participation; futures literacy.

## INTRODUCTION

### Need for societal transformation

The world is facing many complex challenges, from social shortfall due to deeply rooted inequalities to ecological overshoot (Raworth, 2017). If society were to tackle those socio-economic, ecological and political crises, contemporary capitalism is not sustainable (Monticelli, 2021). The current governance systems and companies are not being effective in meeting many of the big crises (Balaguer, 2021).

A radical economic shift together with a deep renewal of policymaking is required in order to safeguard planetary health and human wellbeing (Raworth, 2017). There is need for an important process of essential changes for the staging of a new approach, with strong emphasis on social innovation (Balaguer, 2021). This phenomenon is also known as shifting to a new paradigm, which affects scientific, cultural and political beliefs (Kuhn, 1962; Gardien et al., 2014; Brand & Rocchi, 2010).

Social innovation is an important way to purposefully confront challenges in societal transformation. An example is that post-growth entrepreneurship could be based on social entrepreneurship and social procurement, meaning that organisations use their buying power to generate social value

above and beyond the value of the goods and services being procured (Codemotion, 2019).

### Citizen participation and democratic innovation

At the heart of social innovation is an active civil society. An enabling environment for social innovation is created when individuals and groups at the grassroots level are encouraged and promoted (Howaldt et al., 2016). Politics should not refrain from working with civil society and grassroots movements, especially in the current environment of widespread anti-intellectualism (Monticelli, 2021). Already since the late 20th century there have been increasing concerns about a crisis of democracy (Nelmarkka, 2019). In the Netherlands it is perceptible through a general decrease in political interest and voting activity, resulting in Dutch citizens losing more and more trust in democracy (Rovers, 2022).

Democratic innovation is required to address this crisis of democracy. Democratic innovation can be understood as instituting novel arrangements that support stakeholders' participation in politics (Nelmarkka, 2019). A suggestion for democratic change is to organise for and institutionalise civic power with ensured equity and civic agency (Gilman, 2022). Producing this in current society can be done by implementing horizontal decision making and public assemblies (Monticelli, 2021). Democracy then takes form as an 'Assembly democracy', where participants have a meeting to discuss and engage with a topic that needs decision making, instead of making the final decision based on voting (Nelmarkka, 2019).

Eva Rovers, expert on the field of democratic innovation and co-founder of Bureau Burgerberaad, argues in her book 'Nu is het aan ons: Oproep tot echte democratie' (Rovers, 2022) that citizens' councils (i.e. the public assemblies mentioned in the previous paragraph) play a crucial role in a democracy where politics and citizens work together to solve complex issues. It is democratic innovation through deliberation.

### Social imagination and Futures Literacy

Next to a crisis of democracy, there is also the 'Imaginary Crisis' (Mulgan, 2020). It entails the deficiency of social imagination, meaning there is too little practice of imagining societal futures collectively (Mulgan, 2020). In general people have difficulty with thinking about the future (Tonn et al, 2006; Candy & Kornet, 2019), and especially to imagine how society could be better (Mulgan, 2020). The term 'Futures Literacy' refers to the universally accessible capability to imagine the future, which UNESCO is striving to achieve (Futures Literacy, 2020). As the future is for

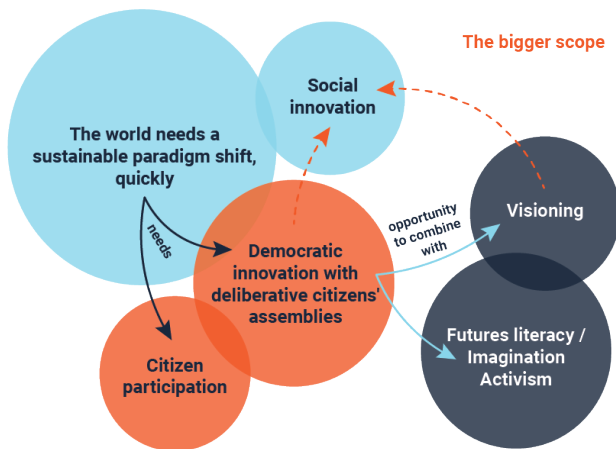
everyone it should be inclusive, instead of only letting a few imagine what a better society would look like (Larsen et al., 2022). As said by Candy and Dunagan (2016, p.28): “no social foresight can be accomplished alone”. Democratising people’s images of the future opens up new horizons and enables transformation more effectively (Futures Literacy, 2020).

Social innovator Geoff Mulgan and strategic designer Cassie Robinson believe that collective imagination should be part of social innovation and deliberative democracy, because society needs diverse ideas to tackle the big challenges communities are facing (MSISweden, 2021).

**Aim of the study**

There is an opportunity to deploy social imagination in citizens’ councils in a deliberative democracy. When people participate in a citizens’ council where they have to discuss a topic and make an important decision, they will be equipped with the competence to imagine a better future collectively and that would enable them to include their vision in the decision making for policy. The scope of this research has been visualised in figure 1 and summarised in a problem-solution fit canvas (Problem-Solution Fit Canvas, n.d.) in Appendix A. An overview of the literature review can be found in Appendix B.

Since the collective capacity to imagine the future is essential to transform human governance (Futures Literacy, 2020), the purpose statement of this qualitative design research study (Creswell, 2014) is to explore methods for stimulating social imagination. Methods for social imagination are also generally defined as futuring exercises. The research question is: ‘How can a democratised futuring exercise guide people from speculation to visioning?’ The next section of the paper elaborates on the gap in existing futuring exercises. Using the gained knowledge and a research-through-design approach, a probe called ‘the Mystery Box’ was created and evaluated. The findings and contributions are to be found in the last sections of this paper.



**Figure 1. Scope of the research**

**BACKGROUND AND RELATED WORK**

**Stakeholders**

In participatory design a shift towards public engagement and broader matters of citizenship is noticeable (Binder et al., 2015; Lindström & Ståhl, 2016), which is relevant for stimulating civic power and democratic innovation. The social idea of democracy as a value strategically guides the field of participatory design (Ehn, 2008). It is crucial for participatory design to be inclusive and to invite marginalised groups who have a stake in the matter (Binder et al., 2015; Lindström & Ståhl, 2016).

This also holds for social imagination, because every person should have access to the capability to imagine the future (Futures Literacy, 2020). For this cause, designers should define futures together with experts and lay-people and use it as a tool for public discussion and debate (Busboom, 2023).

In social innovation, the stakeholder list generally is non-exhaustive (Reed et al., 2009; Björgvinsson et al., 2010; Obata et al., 2012). Stakeholders emerge through various engagements in democratic design experiments (Busboom, 2023) and the relevance to the socio-material issue that is being explored (Björgvinsson et al., 2010). The study of social innovation ecosystems remains complicated (Churi et al., 2020), but an attempt has been made in Appendix C, D and E. A stakeholder onion diagram shows the stakeholders’ relations to a civic power-based approach. A stakeholder matrix maps the stakeholders’ power in social innovation against their passion for visioning/social imagination (Drake, 2018).

**Example of Imagination Activism in a citizens’ council**

An example that practices social imagination to effect change is Camden Council, a local council in the United Kingdom where change comes bottom-up from the community. Camden council held the first climate emergency citizens’ assembly in 2019, and citizen power and participation have been a priority ever since (Hopkins, 2023). Social entrepreneur Phoebe Tickell introduced Camden Council to ‘Imagination Activism’ through her organisation Moral Imaginations (Moral Imaginations, n.d.). Imagination Activism is an approach to collective imagination in order to change policy and governance (Hopkins, 2023). The council is now equipped with the tools and thinking to build new systems. This example is an evidence-based argument for why imagination is key in creating societal change that incorporates long-term thinking.

There are other examples. The Untitled community developed an approach to collectively reimagine society and creates an agenda for social imagination (Untitled Alliance, 2023). Global Assembly shared a Community Assembly Toolkit to co-create the future (Resources, 2022). An overview of more approaches and communities that ignite social innovation, empower citizens and stimulate social imagination can be found in Appendix F.



Figure 2. Existing futuring tools

### Benchmarking futuring tools

Existing futuring tools, which are exercises or games for thinking about the future, were studied using a first person perspective (Tomico et al., 2012). A complete and annotated overview can be found in Appendix G. Some tools that were explored were The Thing From The Future (an imagination game by Stuart Candy and Jeff Watson (Situation Lab, 2015)), Foresight (The Design Lab, 2019), The Work Kit of Design Fiction (Near Future Laboratory, 2021), Manifesto! (Hanna et al., 2021), Peek (The Peek Game, 2020) and Connecting Worlds for a Better Future (DesignLab UTwente, 2022). Figure 2 portrays pictures of these tools.

Insights from exploring these existing futuring exercises were that most tools are in the form of card decks and predominantly words are used instead of visual aid. It is also often expected from the user to write the outcome in the form of a story. Furthermore, the tools are generally about combining trends with contexts, and proposing unexpected combinations to stimulate creative thinking.

These observations conclude a gap in existing futuring tools. It is like the ingredients are provided, but there is no recipe instructing how to think about the future. To illustrate this concretely; The Thing From the Future provides a trend, a context and an object, and then expects users to write a

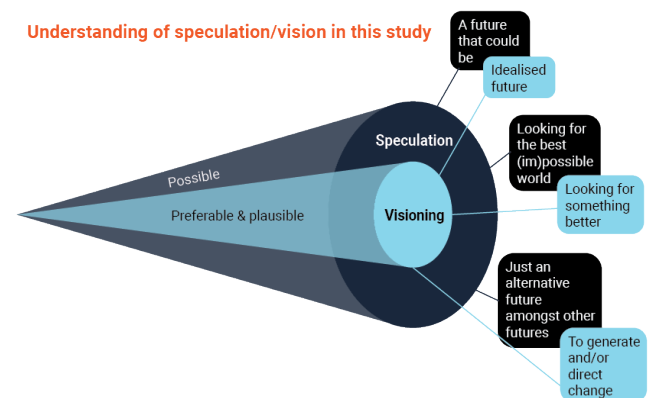
description corresponding the prompt. However, users have to figure out themselves how to generate an idea, there are no guidelines provided of how to actually imagine the outcome. In order to make imagination widely accessible to the public, a futuring tool should function as a bridge that provides guidance. Therefore the research question of this study explicitly mentions 'how can a futuring exercise *guide* people?'

### Understanding of speculation and vision

The second part of the research question '*How can a futuring exercise guide people from speculation to visioning?*' implies a distinction between speculating and visioning. Visioning has been a widely applied approach for making claims about the future (Van der Helm, 2009). Important to note is that not every expression about the future is a vision, but visions are part of speculation. A vision could be understood as "the more or less explicit claim or expression of a future that is idealised in order to mobilise present potential to move into the direction of this future" (Van der Helm, 2009, p. 100).

Even though this is a large scope, visions can be recognised by three solid aspects: (1) the future, (2) the ideal and (3) the desire for deliberative change (Van der Helm, 2009). The first aspect requires the future that is imagined to be a future where people generally would want to move towards. People easily imagine an apocalypse, but imagining a better society is more difficult (Mulgan, 2020). The distinction here is possible futures (including more dystopian ones) against preferable and plausible futures. The former are generally part of speculation, while the latter are characteristic for visioning. The second aspect is to be interpreted as visions being on a spectrum regarding how much they are viewed as ideal. Visions aim for something better, notwithstanding whether it is the best case scenario or not. Lastly, the third aspect refers to the fact that the purpose of a vision is to generate and/or direct change.

The understanding of the distinction between speculation and visioning with the three aspects of visions included is summarised in the visual in figure 3.



Based on Van der Helm, R. (2009). The vision phenomenon. Towards a theoretical underpinning of visions of the future and the process of envisioning. *Futures*, 41(2), 96-104.

Figure 2. Distinction between speculation and visioning

## DESIGN

### Research probe the Mystery Box

Building on the gap found in existing futuring tools, a research probe was created with the goal of providing people guidance in imagining futures and having a visual outcome instead of a written story. The guidance comes in the form of three different methods: (1) recollection/nostalgia, (2) extraction of underlying values and (3) conceptualisation using visual expression. These methods are simultaneously the three exercises that make up the content of the futuring tool that was designed for this study. The following three sections elaborate on each method in detail. The general flow of the futuring exercise has the shape of an upside down 'u': it goes from concrete (1) to abstract (2) to concrete again (3). This flow is also used for establishing company visions, including the explicit strategy to start with something concrete before going abstract to make it more approachable (Bouwman, 2023).

The research probe tangibly takes form as a box (see figure 4 and Appendix H for a poster overview). Its three compartments open in three different ways to encourage curiosity, hence the name 'the Mystery Box'. This is for the purpose of engaging citizens, who are often lay-people with no focus on social imagination in their everyday lives. The Mystery Box should look inviting to motivate non-experts in practicing to think about the future in order to develop Futures Literacy (*Futures Literacy*, 2020).

Since social imagination is meant to be done collectively (Candy & Dunagan, 2016), it is recommended to explore the Mystery Box in a group of 2-5 people. The affordances of the Mystery box are designed in a way that users are enabled to do the futuring exercise without a facilitator. The instruction cards (see Appendix I) inform step by step which actions to take and what compartment to open next.



Figure 3. The Mystery Box

### (1) Recollection/nostalgia

The first compartment (see figure 5) reveals a phone on which a minute long video plays. It is a thought exercise that places the participants in a non-determined future. Consequently, the participants are being asked to remember something of the past that they miss, something that makes them think 'life was good back in the days'. After having watched the video, the participants write down their recollected thoughts and press out the cards (see figure 6) to take with them to the next step. The thought exercise video and text can be found in Appendix J.

The thought exercise contains a metaphor to help relate, inspired by a quote of Matthew McLuhan: "*We drive into the future using only our rearview mirror.*" The metaphor in the thought exercise is that people are situated in a moving car, not knowing where they are headed. However, when they look in the rearview mirror, they see glimpses of 'the past' they remember.

In practice, people are asked to name something they value from their present lives. This forms the basis of the rest of the futuring exercise, thus the present is essentially used to imagine the future. Past-present-future interrelations are inherent to nostalgia (Palmer, 2008). Nostalgia is little engaged in social imagination yet, despite its potential. Nostalgic feelings indicate how the status quo is being perceived and what is expected of the future (Palmer, 2008). The advance placement in the future before looking back to the present is loosely inspired by backcasting, a method used in transition design (Carnegie Mellon University, 2023).



Figure 4. Compartment 1: the thought exercise



Figure 5. Rearview mirror cards





Figure 6. Compartment 2: the underlying values



Figure 7. Ladder of Abstraction cards

## (2) Extraction of underlying values

The second compartment (see figure 7) contains ‘Ladder of Abstraction’ cards (see figure 8). The participants are instructed to clip their card from the first compartment on the bottom of the ladder. Then, they ask each other five times ‘why’ (“What Are 5 Whys?,” 2023), in order to determine the root cause of what they value. The top of the ladder represents the underlying value. After every participants has climbed their ladder, they tear off the tops and look at their underlying values together. The participants deliberately discuss which value they would like to pick collectively to work with from now on. It is not necessary that all participants share the same perception, as long as they all see a mutual benefit in choosing that particular value for the rest of the exercise (McCalman et al., 2016; Drake, 2018).

The Ladder of Abstraction is an existing concept that argues the meaningful worth of relating high-level abstractions to lower-level abstractions (Hayakawa & Hayakawa, 1992; Leviton, 2015). This also refers back to the concretising-abstracting-concretising flow of the Mystery Box that was mentioned previously. This second compartment extracts underlying values from the participants. In the design approach Frame Creation, one also starts from the only constant in the equation, which is the desired value, and only after establishing that, one proceeds with developing a frame



Figure 9. Compartment 3: the collective mood board

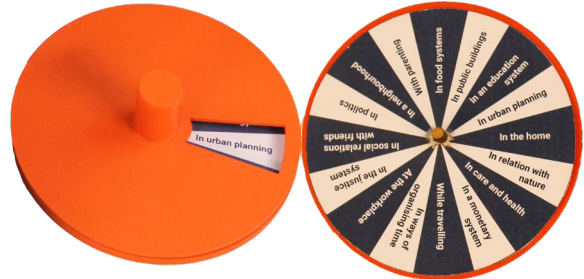


Figure 10. Wheel of Contexts



Figure 8. Printing a picture

to look at the problem situation (Dorst, 2015). In this case, the values are explicitly extracted to nudge the discussion the participants are having towards a preferable and plausible future which is a characteristic for visioning (Van der Helm, 2009).

## (3) Conceptualisation using visual expression

The third and final compartment of the Mystery Box (see figure 9) is about concretising the participants’ view on the future based on the value they picked. First, the participants are instructed to spin the Wheel of Contexts (see figure 10), to determine a context for the participants to think about the value concretely. Then, all participants think individually about how they imagine the value manifesting in the context in the future.

Subsequently each participant prints a picture of how they see the value represented in the future. They can use Google on the phone from the first compartment to search a picture that helps them tell the others about what they imagine. The portable photo printer is hidden but the printed picture comes out of the side of the third compartment (see figure 11).



**Figure 9. Mood board sheet**

Thereafter, the participants deliberately create a collective mood board (see figure 12) by sticking the pictures on a sheet and annotating them with markers and sticky notes. This provides the chance to build on top of each other. The outcome is having the mood board as a visual of how they see their value represented in the future.

This final part of the Mystery Box is similar to value conceptualisation, which is a business term in origin (Oosterlaken, 2022). It consciously includes visual aid, as this was a gap that was found in benchmarking existing futuring exercises. More embodied and media-rich depictions of futures have the potential to make the field of social foresight more effective in shaping change (Candy, 2010; Candy & Dunagan, 2017; Candy & Kornet, 2019).

**EVALUATION METHOD**

**Approach**

The goal of the study is to evaluate (1) how citizens experience futuring with the research probe, (2) whether the imagined future situations are considered to have visionary criteria and (3) if the perceived self-efficacy of the participants has increased after interaction with the research probe.

The empiricist approach was used, which is a design research approach where the design provides a case that can be analysed qualitatively and quantitatively. The mixed methods testing methodology was chosen consciously because both qualitative methods and quantitative methods in combination provide a better understanding in the participants’ perceived self-efficacy in future visioning than either method alone.

The data that was gathered consists of qualitative data in the form of observation notes taken by the researcher and transcriptions from semi-structured interviews, and quantitative numerical data from questionnaires. A thematic analysis was released on the data, using process coding (*Essential Guide to Coding Qualitative Data*, n.d.) with winnowed data from the observation notes and in vivo coding with winnowed data from the interview transcriptions. First a within-case analysis was conducted starting with closed coding, and thereafter open coding to define distinctive clusters. Finally, a cross-case analysis was done to compare common findings.

**Procedure**

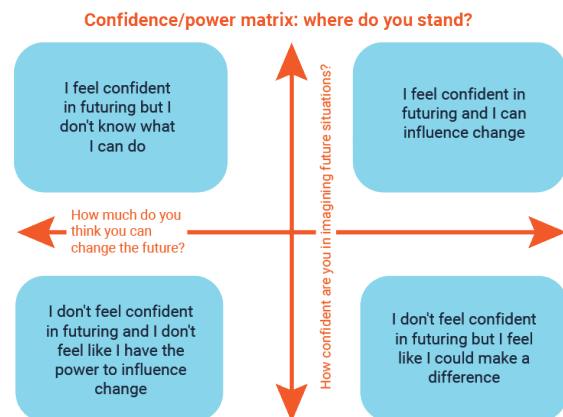
Three creative workshops of 90 minutes each were held. While the participants interacted with the Mystery Box on

their own account (see figure 13), the researcher took the role of an observer. After every session, a semi-structured interview was held with the participant group. The aim was to gain deeper insight in the participants’ experience with the Mystery Box, the added value of the metaphors (rearview mirror and Ladder of Abstraction), their collaboration, the usefulness of visual expression, and difficulties the participants had encountered. The questions can be found in Appendix K. The audio of the interviews was recorded and transcribed.

Additionally, before the workshops started and after the workshops came to an end, the participants were asked to fill in a short questionnaire that included 5-point Likert scales based on quadrants of the Polak Game (Hayward & Candy, 2017). The quadrants were reinterpreted for this study, which resulted in the confidence/power matrix in figure 14. The questions on the two axes were asked to measure the participants’ perceived self-efficacy in imagining future situations before and after interaction with the Mystery Box. The questionnaire after the workshop included four more questions with a 5-point Likert scale. The questions were statements based on the aspects of visioning (Van der Helm, 2009) that were elaborated on in the background of this paper. Both questionnaires can be looked into in Appendix L.



**Figure 10. Setting during a session**



Based on Hayward, P., & Candy, S. (2017). The Polak Game, or: Where do you stand? *Journal of Futures Studies*, 22(2), 5-14

**Figure 11. Confidence/power matrix**

## Participants

In total, ten people participated in the study. The first session was held with a group of three participants, the second session was with two participants and the third session had five participants. The participants were recruited with a workshop invitation that was shared in the researcher's network (see Appendix M). Emphasis was on that the workshop is suitable for anyone, in order to attract diverse participants that are not experienced in futuring in their everyday lives. Table 1 shows the age, gender and job profile/occupation of the participants.

## FINDINGS

### Results generated by the participants

The thought exercise in the first compartment of the Mystery Box yielded individual results from the participants. The things they missed when placing themselves in the future and looking back are in the bottom row of table 2.

Age	Gender	Job profile
24	Female	Educational developer, facilitator, student
55	Female	Freelance / entrepreneur
55	Female	(Team)coach and trainer in healthcare
21	Female	Product design student from a university of the arts
39	Female	Freelancer
27	Female	City councilor + social designer
36	Female	Strategic advisor
25	Female	PhD researcher
48	Female	Youth care consultant youth services
30	Female	Ecosystem manager high tech at a real estate developer

Table 1. Backgrounds of participants

Session 1			Session 2		Session 3				
P1	P2	P3	P4	P5	P6	P7	P8	P9	P10
connect ion	(being) together	health	identity	autonomous & interaction	meaning	joy	being curious	freedom	development
fun/enjoyment	get to know each other better	energy and fitness in the world	then who is making the decisions?	frame of reliance for life	make impact on the world and people	being happy	learn what you do not see yourself	freedom, relaxation	reflection
relaxation	time for depth	task division that brings job satisfaction	not personal anymore, just doing because it is	create environment	live from your own values	basis of social interaction	other perspectives	visual	standing still
rest	standing still	focusing on doing one thing very well	not using your brain anymore	shape/ give identity	how you live your own life independently	connection	consciously not working individually	joy	feeling
simplicity	attention	delete things that do not matter	no decisions anymore	family is everything	freedom, interaction with people	important in life	connection to people and environment	rest/ room/ fun	rest
simple old Nokia phone	old-fashioned simple camping	simplicity	doing things with myself/ with people, not everything was done by a machine	mom, elder family members	rashness, and food, fresh air and energy goes without saying	family and friends, and stability (illusion of systems)	long walks in nature close to home with the scent of flowers and rain together with friends	my children playing in the backyard near water/mountains, quiet evening walk through the fields	lying on the beach, walking through nature, energy to be active all day

Table 2. Results of the mirror cards and Ladders of Abstraction



### Session 1 mood board outcome

In session 1, the participants deliberately chose the value ‘connection’ because it appeared as an underlying value twice (yet in different words). The context the participants spun was ‘In public buildings’. Their conversation quickly was about train stations, and how that is the perfect place for connection yet currently there is mostly individualism. It is rare to have eye contact while walking through corridors. One participant had printed a picture of a room with merely single chairs. This brought the group an idea for waiting spaces in train stations: besides a silent area there should also be areas where it is normal to start conversations with strangers. The annotated mood board can be seen in figure 15.

### Session 2 mood board outcome

The participants from session 2 discussed something radically different. They had chosen the value ‘autonomy’ because it was similar to but richer than the other value ‘identity’. Due to spinning the context ‘with parenting’, the participants had a discussion about the consequences of artificial intelligence raising children. They referred back to the lower steps in their Ladders of Abstraction. For example, P5 had stated that family is important (hence the drawn picture frames on the mood board, see figure 16). The participants began to question social impacts like what weddings would be like.

Even though the future they imagined could be categorised as dystopian, in the end the participants tried hard to come up with upsides if this were the future to be, because they wanted to end on a positive note. They imagined that everybody would be your sibling, and artificial intelligence would give you options but you get to decide ultimately. Despite the fact that the participants imagined a concerning future, they still thought about how their values were going to survive. As quoted by P5: “I like this approach because I feel like it forced me to say, this is the part of my value that really needs to always be there”.

### Session 3 mood board outcome

The group from session 3 deliberately chose the value ‘meaning’, because all participants could relate to it. They first spun the context ‘in the justice system’, however they agreed to spin again as they knew little about the justice system. The context to proceed with turned out to be ‘in relation with nature’. The pictures the participants printed were similar, but they imagined differently how meaning would manifest in the future in relation to nature. While discussing, P7 noticed a connecting trend. Their thoughts combined ranged from an individual level towards a systemic level. The participants visualised this trend on their mood board (see figure 17).

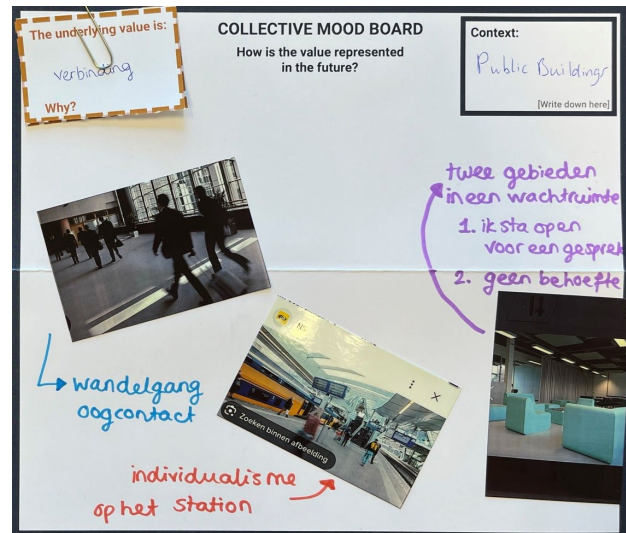


Figure 12. Mood board session 1

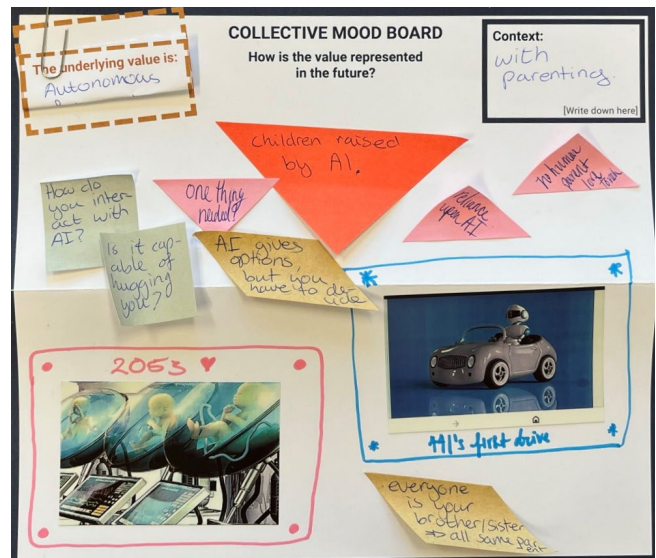


Figure 13. Mood board session 2



Figure 14. Mood board session 3



## Thematic analysis results

As illustrated, the within-case analysis has yielded many interesting insights. The closed coding resulted in the following themes: experiences with the probe, metaphors, collaboration, using a visual to express, difficulties and visioning. Subsequently, the open coding surfaced various distinctive clusters, like ‘metaphor use in language’ and ‘reflection’ in session 1, ‘drawing’ and ‘values’ in session 2 and ‘accepting the struggle’ and ‘need for application’ in session 3. The thematic analyses of all three sessions can be examined in detail in Appendix O to T.

Looking at the cross-case analysis, there are recurring observations between different sessions. The element of surprise turned up consistently. To quote P4: “It surprises me how this all unfolds”. P2 mentioned: “The box encourages curiosity”. Participants from session 3 said that the Mystery Box felt like doing an escape room.

The helpfulness in metaphors also became apparent in all sessions. In general the participants claimed that the metaphors made the exercises more approachable and that the ladder helped to think in little steps, although some thought that another metaphor could have been used instead.

Furthermore, all participants strongly believed that collaboration in the futuring exercise was valuable. Quoting P5: “This particular outcome and the richness of it would have been impossible without the interaction”. The participants constantly helped each other with thinking along. In two different sessions was mentioned that the group had helped participants to break the cycle in their own brain by adding perspective.

Lastly, the contribution of visuals was also convincingly supported by the participants. It helped to make things concrete and to see other’s images. P10: “the visual expression creates a shared vocabulary”.

## Quantitative results

The results from the questionnaires have been visualised in figure 18 and 19. The violin plot addresses how much the participants considered their outcome to have visionary aspects (note that the most right violin plot is about an

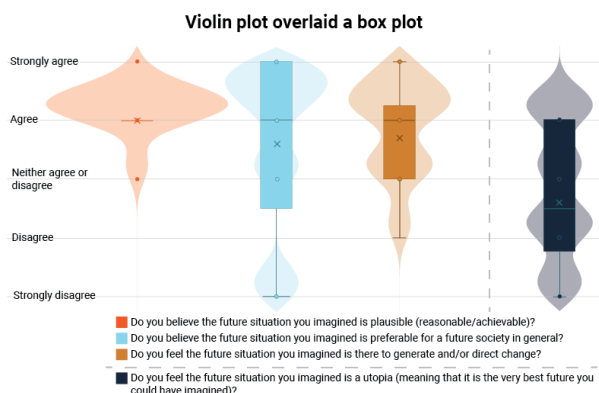


Figure 15. Violin plot about visionary aspects

inverted statement; a vision is a better future imagined but not necessarily the best). Generally the imagined futures were considered to be visionary, however it refrains from being a strongly convinced claim since the median of all four statements about visionary aspects is between ‘agree’ and ‘neither agree or disagree’.

Figure 19 shows where participants placed themselves before and after interaction with the Mystery Box. Half of the participants did not change position. The other half have increased their confidence in imagining the future after the workshop, but only one participant felt more empowered. There was no decrease in confidence or perceived power.

## DISCUSSION

### Interpretations of the findings

The aims of the study were to evaluate (1) how citizens experience futuring with the research probe, (2) whether the imagined futures are considered to have visionary aspects and (3) if the perceived self-efficacy of the participants has increased after interaction with the research probe. Referring to the findings, the following deductions arise: (1) All participants were able to participate committedly in the futuring exercise. Especially the element of surprise worked well for the purpose of engaging in futuring practice. Metaphors and using visual expression have proven to be worth considering when wanting to make imagination exercises and social foresight more approachable. Collaboration and deliberate discussion are beneficial for reaching a richer outcome of social imagination. (2) The imagined outcome of the value represented in the future was consistently yet not convincingly considered to be visionary. However, the amount of participants is insufficient to be able to make a quantitative claim. (3) The same holds for the perceived self-efficacy. There is some indication that letting lay-people engage in futuring with an accessible exercise increases their confidence in imagining the future, however this should be researched more extensively.

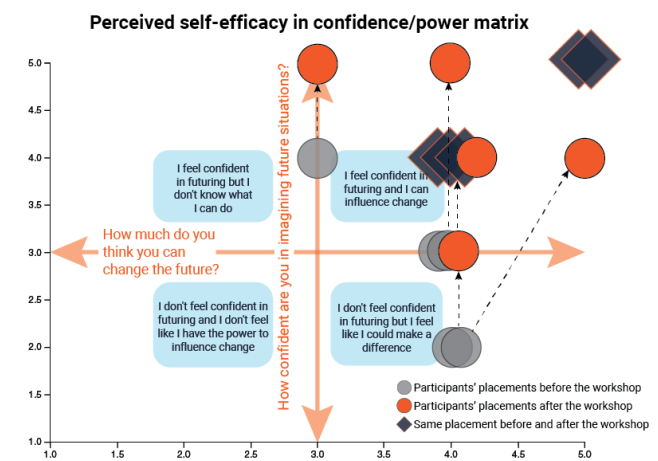


Figure 16. Perceived self-efficacy in confidence/power matrix

Something to consider is the important role that the context has played in conceptualising the values. In The Mystery Box the context was randomly assigned after the values were determined. However, participants' values might differ in a different context, because the context influences what people find important in that specific setting. The Mystery Box was designed with the underlying intention to be used in citizens' assemblies in a deliberative democracy in order to fuel social innovation. In citizens' assemblies, the context will be predetermined and specified, which makes the need for the Wheel of Contexts redundant. Nevertheless it has been part of this study because pilot testing had pointed out that people were in need of some guiding boundaries for their imagination.

### **Wider application**

The participants of the study brought forth an interesting additional step to the Mystery Box. They suggested to concretise the mood board outcome into something practical that is deployable in the present. Going back to an action-based level is still missing. If that were to be added, one could imagine organisations, companies and/or cities using the Mystery Box to envision or evaluate their strategy and vision.

Femke Coops, PhD researcher working on design and transition, has argued that societal visions are also discussed in the discipline of transitions research although mostly verbally. Creative methods to make matters tangible are upcoming. However, the value level is often still missing in transitions research, which makes the methods from the Mystery Box an interesting contribution to this field. On top of that, the approach in transitions research is generally systemic (e.g. in systems analysis) which makes it difficult for individuals to express their own authentic opinion. The Mystery Box helped people to express themselves by shifting between individual exercises and collective assignments. Leaving room for individual values could possibly reinforce a creative and equal environment which benefits the societal transition.

### **Future directions**

Apart from the practical application in aforementioned fields, there is an opportunity to do more research on how to let citizens collectively engage in specifically visioning instead of speculative futuring. Imagining preferable and plausible futures is useful for social imagination since it helps to believably imagine a better society. Another area to explore further is using visual expression for establishing Futures Literacy. One could think of using artificially intelligent image generators for community futuring.

### **CONCLUSION**

This study researched how a democratised futuring exercise can guide people from speculation to visioning. The wider utility is that stimulating Futures Literacy in democratic innovation is beneficial for the transformation of society. Deploying a research-through-design approach, a probe called the Mystery Box was created based on gaps found in

existing futuring tools. The Mystery Box includes a thought exercise that uses recollection/nostalgia and a metaphor, the method of extracting underlying values with the Ladder of Abstraction, and visual expression to collectively make a mood board portraying an aspect of the future.

Three workshops sessions were held involving participants with different job profiles/occupancies. The qualitative analysis suggest that the methods from the Mystery Box are suitable for making social imagination more approachable and engaging for the public. Even though the trends in the quantitative results cannot make a convincing claim, they still indicate that the methods might stimulate visioning and increase perceived self-efficacy in imagining the future. It is valuable to evaluate this in future studies.

The main contribution of this study is providing knowledge for other researchers, designers, policy makers, politicians, institutions, social entrepreneurs and Imagination Activists, on how to make futuring tools more accessible for social imagination.

### **ACKNOWLEDGMENTS**

I would like to express my gratitude for the inspiration, support and valuable feedback from my coach Dan Lockton. Furthermore, I am grateful for all participants who provided so many interesting insights. My thanks are also extended to Femke Coops for the input and Vere Vreeswijk for being my sparring partner.

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# Appendix A: Problem-Solution fit canvas

Getting practical insights into the problem situation and translating to solutions with higher chances of solution adoption probability. By listing problems and behaviour, patterns and keywords emerge. The solution should tap into these and resemble natural triggers.

<h3>1. Target group</h3> <ul style="list-style-type: none"><li>The target group consists of <b>all citizens with democratic rights in the Netherlands in this time period (2023)</b>.</li></ul>	<h3>6. Target group constraints</h3> <ul style="list-style-type: none"><li>The current democratic system <b>prevents</b> the target group from <b>taking action</b> themselves.</li><li><b>Futures illiteracy</b> limits their choices of solutions.</li></ul>	<h3>5. Available solutions</h3> <ul style="list-style-type: none"><li><b>The right to vote gives citizens a voice, but that is limited</b> to choosing representatives who have the decisive power to shape society.</li></ul>
<h3>2. Jobs-to-be-done / problems</h3> <ul style="list-style-type: none"><li><b>Changing the status quo</b> when citizens are not satisfied with it.</li><li><b>Working towards a desirable, sustainable future.</b></li></ul>	<h3>9. Problem root cause</h3> <ul style="list-style-type: none"><li>The real reason of the problems is the need to elicit societal change and to <b>make a paradigm shift happen quickly</b>.</li><li>The back story behind the need to do the job is that the current way of living is neither sustainable nor equitable.</li></ul>	<h3>7. Behaviour</h3> <ul style="list-style-type: none"><li>To address the problem and get the job done, citizens use their limited power by voting.</li><li>They also <b>share their opinions</b> through different kinds of media.</li><li>In more extreme forms, they organise demonstrations and <b>protest</b> against current policies.</li></ul>
<h3>3. Triggers</h3> <ul style="list-style-type: none"><li>Seeing fellow citizens take action triggers others citizens to act as well.</li></ul>	<h3>10. The solution</h3> <ul style="list-style-type: none"><li>Citizens should be encouraged to <b>actively participate in shaping the society they are part of</b>, e.g. in citizens' assemblies. This will <b>empower</b> them to be in charge of their own future.</li><li>Citizens should become acquainted with <b>futures literacy</b>, giving them the skill to <b>imagine a desirable future</b>.</li></ul>	<h3>8. Channels of behaviour</h3> <ul style="list-style-type: none"><li>Citizens take action <b>offline</b>: in community gatherings, on the streets, in newspapers / magazines</li><li>Citizens also take action <b>online</b>: on social media, on blogs / forums, in chat groups (like Telegram)</li></ul>
<h3>4. Emotions: before / after</h3> <ul style="list-style-type: none"><li>Powerless, lost, frustrated /</li><li>Confident, in control</li></ul>		

# Appendix B (part 1): Literature review of existing related research

## Paradigms

ResearchGate

Changing your Hammer: The Implications of Paradigmatic Innovation for Design Practice

Rethinking value in a changing landscape. A model for strategic reflection and business transformation

Watched video lecture about Economic Paradigmatic Shifts and their Consequences on Ethics (Sara Colombo)



To convince corporates to do collective good instead of pleasing shareholders, a whole economic shift is needed (What If to What Next podcast with Phoebe Thickell)

## The Structure of Scientific Revolutions (Kuhn 1962)

ResearchGate

The structure of scientific revolutions (Thomas S. Kuhn, 1970, 2nd ed. Chicago, London: University of Chicago Press Ltd. 210 pages)

## Origin of paradigms

The working of paradigms: We handle anomalies (crises) by finding a new paradigm. A paradigm shift affects all other scientific disciplines and cultural and political beliefs. However, the world more generally isn't affected by the change. We only develop new paradigms, until the community falls into a crisis again.

Counter argument: wrong to see the world in paradigms

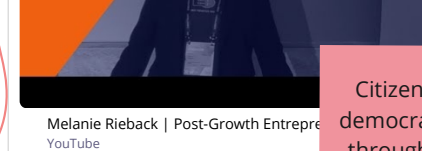
Scientists deny themselves the novelty of true innovation by failing to embrace anomalies and redefine boundaries

True scientific revolution happens when we accept that everything we know about a paradigm may, in fact, be wrong

## Post-Growth Entrepreneurship (Melanie Riebeck)

Social Procurement is when organisations use their buying power to generate social value above and beyond the value of the goods, services or construction being procured.

Social Entrepreneurship: social procurements + social compliance



## Doughnut economics and politics

Article

On the necessity of prefigurative politics

Lara Monticelli

"contemporary capitalism is no longer sustainable if we are to tackle the multiple political, socio-economic, and ecological crises ongoing simultaneously." (Monticelli, 2021)

A Doughnut for the 21st century

A new model of human well-being and guide humanity in the 21st century requires that we bring dignity to all people and to the planet. The conceptual framework for planetary boundaries.

A way to produce democracy in the here and now: horizontal decision-making and public assemblies

Politics should not refrain from working with civil society and grassroots movements, especially in the current environment of widespread anti-intellectualism

Boundaries

that together encompass the most boundaries in social life: shortfalls in wellbeing, and literacy, and energy poverty. Its nature, dimensions and their relative indicators are derived from international agreed minimum standards for human wellbeing, as established in 2025 by the Sustainable Development Goals adopted by all member states of the United Nations.

The Doughnut's outer boundary is an ecological ceiling on Earth's carrying capacity, and the inner boundary is the planet's minimum standards for human wellbeing, as established in 2025 by the Sustainable Development Goals adopted by all member states of the United Nations.

Figure 1: Doughnut and the Doughnut Economics. The Doughnut is a circular diagram with an inner ring (social boundaries) and an outer ring (ecological boundaries). The space between them is the 'Doughnut' representing the space for human well-being.

"Designers must be non-dogmatic and anti-authoritarian in order to question the 'findings' of scientific research. Blindly accepting scientific authority means surrendering to what existed in the past."

— Krippendorff, *Design Research, an Oxymoron?* (2007)

## Democracy Book: Nu is het Aan ons (Eva Rovers 2022)

Shaping Social Innovation in Local Communities

The Contribution of Intermediaries

Contribution of intermediaries

A Review of Research on Participation in Democratic Decision-Making Presented at SIGCHI Conferences

Crisis of democracy

Democratic innovations

Assembly democracy

List of things wrong with democracy

Democratic innovation through deliberation

EVA ROVERS  
**NU IS HET AAN ONS**  
OPROEP TOT ECHTE DEMOCRATIE  
*'Coöperatief'*

## Participatory design

BECOMING RESPONSE-ABLE STAKEHOLDERS – PARTICIPATORY DESIGN IN TIMES OF UNCERTAINTIES

Asa Ståhl  
Umeå University

Participation in Design Things

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A crucial part of PD projects has been to invite those, often marginalized, who have a stake in the matter at hand into the design processes

Participatory design has its roots in movements towards democratisation at work in the Scandinavian countries

Participation and joint decision-making became important

CoDesign International

Democratic design experiments: between parliament and laboratory

Thomas Binder, Eva Brandt, Pelle Ehn & Joachim Heide

The social and rational idea of democracy as a value strategically guides participation design. It leads to considerations of conditions for proper and legitimate user participation.

2 democratic changes for building civic power: organising for and institutionalising civic power

Binder et al. (2015) describe a shift from democracy at work to broader democratic matters of citizenship and public engagement and from users as representatives to citizens and publics.

Aim is to make: "...issues experientially available to such an extent that 'the possible' becomes tangible, formable, and within reach of engaged yet diverse citizens".

## Social Innovation

An active civil society is at the heart of social innovation, a country should promote it

Mapping the World of Social Innovation

Key Results of a Comparative Analysis of 1.005 Social Innovations

Jürgen Howaldt, Christoph Katerka, Antonius Schröder

Circular Thinking, Social Innovation and Governance

Jose Esteban JEG, Gabarda Balaguer

Social innovation (collective intelligence in particular) is one of the keys to successfully confront environmental challenges

"The current institutional and spatial forms of Institutional Governance are not being effective when facing our enormously complex challenges"

There is need for all the actors to emphasize social innovation, especially for Governance to lead and support an important process of the staging of a new approach and paradigm.

## Citizen participation

Building Civic Power in Crisis

"Ensure that equity and civic agency are front and center in the process design of participation."

2 democratic changes for building civic power: organising for and institutionalising civic power

Discussion: challenges of participation in design on the boundaries between municipalities and communities of citizens

"Simply choosing a PD approach because public planning is supposedly democratic, for instance, may be problematic."

Collective intelligence

2020 Strategic Foresight Report

CHARTING THE COURSE TOWARDS A MORE RESILIENT EUROPE

Participation in Design between Public Sector and Local Communities

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Discussion: challenges of participation in design on the boundaries between municipalities and communities of citizens

"Simply choosing a PD approach because public planning is supposedly democratic, for instance, may be problematic."

# Appendix B (part 2): Literature review of existing related research

## Visioning

**Journal of Futures Studies**  
 Volume 41 (2009) No. 1/4  
 Contents lists available at ScienceDirect  
**Futures**  
 journal homepage: [www.elsevier.com/locate/futures](http://www.elsevier.com/locate/futures)

The vision phenomenon: Towards a theoretical underpinning of visions of the future and the process of envisioning

Visions and envisioning have been popular approaches for making claims about and for the future

Relatively little theoretical attention has been paid to visions within the future studies domain

"We could see a vision as the more or less explicit claim or expression of a future that is idealised in order to mobilise present potential to move into the direction of this future"

Not any claim or expression about the future is a vision

3 aspects of a vision: (1) the future (2) the ideal (3) the desire for deliberate change

What its consequences are, just questioned about what vision. From a theoretical perspective vision of the world's sustainable

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 0950-0707/\$ - see front matter © 2009 Elsevier B.V. All rights reserved.

## Nostalgia

**Very little engaged in design yet**

Manika Puhemberger  
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 University of Oxford, Linacre College  
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 URL: <http://dx.doi.org/10.1016/j.sbspro.2009.06.008>  
 DOI: 10.1016/j.sbspro.2009.06.008

**NOSTALGIA MATTERS: NOSTALGIA FOR YUGOSLAVIA AS POTENTIAL VISION FOR A BETTER FUTURE!**

Vahnost nostalgije: Nostalgija za Jugoslavijom kao moguća vizija bolje budućnosti

"This clearly shows that nostalgic feelings are never directed to the past alone, but always tell us something about how the status quo is perceived and what is expected of the future."

Past-present-future interrelations that are inherent to nostalgia

Normalcy bias

Myth: The way things are is the way things are always going to be.

## Experiential Futures Ladder (Candy, Dunagan 2016)

"Bridging the gap between the ground of present sensation and islands of abstract possibility"

"No social foresight can be accomplished alone"

Practical research: situation/stuff level

The Experiential Futures Ladder

www.simonoregan.com  
 The Experiential Futures Ladder - Simon

"A situation details the circumstances in which we encounter this future. It's the particular events that us as the audience will experience in physical form at 1:1 scale in various media."

The Experiential Futures Ladder

www.simonoregan.com

## Imagination infrastructure (Cassie Robinson 2023)

Feedback loops to decision-makers AND resource-holders

Sense-making

Content creation

Practices

Spaces - sites of practice

Communities

Archives

**Imagination Infrastructures Anticipation Conference**

Last November I was one of the speakers at the Anticipation conference - thank you to Kelly you don't know it, I'd really...

**Building blocks (infrastructure) for collective imagination**

## Futuring

**The Futures of Hybrid Work - Participatory Futuring in Practice**

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**ABSTRACT**  
 Throughout the last years, but especially with the outbreak of the COVID-19 pandemic, the future of work has become a topic of intense public discussion and debate.

**Keywords:** hybrid work, remote work, participatory futuring, design thinking, methods, strategic foresight

**1. INTRODUCTION**  
 The COVID-19 pandemic has turned the nature of work to hybrid, a transitional phase between the traditional on-site workplace and hybrid and remote work conditions. Six practices and roles around the institutional framework of 'being at work' are used as the discussion and raising questions on several levels:

## Social imagination

**SOCIAL INNOVATION FORESIGHT #1 ON SOCIAL IMAGINATION**

Geoff Mulgan: social innovator (Not a designer, but interesting angles)

Wrote report about imagination: 'Imaginary crisis'

Easy to imagine dystopias, hard to imagine how society could be better

We need radical imagination about what could be possible in 2 generations to move forward

Why is there no collective imagination in deliberative democracy?

The power of imagination is collective -> citizen participation

Justify that helping people to imagine will stimulate societal change/social innovation

Fuel social imagination

**THE IMAGINARY CRISIS (AND HOW WE MIGHT QUICKEN SOCIAL AND PUBLIC IMAGINATION)**

Geoff Mulgan, UCL STEaPP and Demos Helsinki

Imaginary crisis is the result of a deficit of social imagination

Institutions like politics/universities have vacated this space

**Normalcy bias**

Myth: The way things are is the way things are always going to be.

## Foresight

**Turning Foresight Inside Out: An Introduction to Ethnographic Experiential Futures**

Shant Cuddy  
 Carnegie Mellon University  
 USA  
 Kelly Krass  
 Kathrin Conradi

**ABSTRACT**  
 This article contributes an emerging hybrid design practice by offering an emerging framework making sense of the future more radical and creative. The Ethnographic Experiential Futures (EEF) cycle provides practical ways of actively engaging with future participants, and ethnographic practices, to generate present ability on the multiple (spatial, temporal, social and experiential) scales, with a view to promoting more diverse and layered ways of envisioning the future. The structure of the EEF Cycle is derived from hybrid offers aimed not to deliver future practitioners over time, but to offer a way of exploring a more future person in a wide range of contexts.

**Keywords:** Active Research, Design Fiction, Ethnography, Experiential Futures, Integral Futures, Interdisciplinary Knowledge Science, Speculative Design

"The image need for the method future is the backbone."  
 Frank R. Pick, The Shape of the Future  
 "The future is made as it's not somewhere else."

"people often find it difficult to think about the future (Tonn et al., 2006)"

## Futures Literacy

FL for inclusivity and diversity: "We are subconsciously committed to building singular images of the time yet to come by reproducing dominant ideas and values. This unintentionally contributes to the marginalization of those who do not fit into this image. More inclusive and better futures are not going to happen until we acknowledge and recognize that futures for all cannot be imagined by a few."

What is 'Futures Literacy' and Why Is It Important?

On overcoming blind resistance to change and poverty of the imagination.

The term 'futures literacy' is the capacity to know how to imagine the future, and why it is necessary

A futures literacy approach is an essential part of responsible policymaking

Capability to imagine the future

Easy to imagine apocalypse and disaster or new generations of technology. But we find it much harder than in the past to imagine a better society

The promise of reviving shared social imagination: that communities can once again become heroes in their own history rather than only observers.

Most imagination has tended to be extensions of present trends (technology, markets, cities)

"The decline of imagination matters because societies need a wide range of ideas and options to help them adjust, particularly to big challenges like climate change and ageing."

**Imagination Activism (Phoebe Tickell)**

Applied in local council

**Imagination Activism**

Introducing the imagination activist, new kind of activist who harnesses the power of imagination and vision to build new systems rather than fighting the old.

Examples of contexts

**Imagination Activism (Phoebe Tickell)**

Applied in local council

**Imagination Activism**

Introducing the imagination activist, new kind of activist who harnesses the power of imagination and vision to build new systems rather than fighting the old.

**Futures Literacy**

The future is uncertain. Climate change, pandemics, economic crisis, social exclusion, racism, the oppression of women, inter-generational conflict, and more, shatter the conventional images

"Futures Literacy addresses the urgent need to transform human governance by empowering everyone to use-the future more effectively and efficiently." "Democratizing the origins of people's images of the future opens up new horizons in much the same way that establishing universal reading and writing changes human societies."

-summary->



# Appendix C: Stakeholder research

## What are the right boundaries for defining a community for visioning democratic innovation? In the context of social innovation

Helix quadruple model

### Circular Thinking, Social Innovation and Governance

Jose Estebe, JRCB, Gabriela Balaguer  
 joseeb.guberd@gmail.com

**ABSTRACT**  
 The current institutional governance, companies and the society as a whole are not being effective in meeting many of the current challenges. Some of these, such as environmental, ecological, energy and health protection challenges among others, have grown to be feared all over the world. A key transformation of our political, economic, social and environmental landscape has become increasingly relevant. The circular economy is an opportunity as a new model of economic and social development. It not only respects a new way of thinking and acting, but also the actors that make up the development process to provide a circular way of thinking and acting.

“social innovation will contribute decisively to the development process: social capital, social interaction laboratories, co-implementation, standardization, platforms, corporate social responsibility, public-private partnerships and collective intelligence.”

**1 INTRODUCTION**  
 The current institutional governance, companies and the society as a whole are not being effective in meeting many of the current challenges. Some of these, such as environmental, ecological, energy and health protection challenges among others, have grown to be feared all over the world. A key transformation of our political, economic, social and environmental landscape has become increasingly relevant. The circular economy is an opportunity as a new model of economic and social development. It not only respects a new way of thinking and acting, but also the actors that make up the development process to provide a circular way of thinking and acting.

“As Fritjof Capra [19] states, “systemic thinking is intrinsically multidisciplinary; it focuses on patterns of relationships that are common to all living systems: individual organisms, social systems and ecosystems.”

### The Futures of Hybrid Work - Participatory Futuring in Practice

Julliane Rusboom  
 Rusboom@futuresociety.dk  
 Roskilde, Denmark  
 rusboom@futuresociety.dk

**ABSTRACT**  
 Throughout the last years, and especially with the outbreak of the COVID-19 pandemic, hybrid work has become a common practice. This paper explores the potential of hybrid work as a tool for public discussion and debate. It is therefore essential to find the key to the development of hybrid work as a tool for public discussion and debate.

“Designers should not have the power to define futures alone, but do this together with experts, politicians and lay-people and use it as a tool for public discussion and debate.”

**Building Civic Power in Crisis**  
 HOLLIE RUSSON GILMAN, New America, Harvard Ash Center

“governing institutions could more effectively use the expertise of people inside and outside of government with scientific credentials, practical skills, and ground-level street smarts [31]”

“Engaging capacity across different sectors (e.g., academia, the social sector, public sector, private sector, civil society, and government) leads to more holistic, informed, and effective decision-making.”

“a civic power-based approach is typically focused on deploying networks, stakeholders, and decision-makers involved in tackling significant societal issues.”

### An Observational Study on the Challenges Faced by Actors in a Social Innovation Ecosystem

Luciana Chacri  
 UNIRIO  
 Rio de Janeiro, RJ, Brazil  
 luciana@ci.uerj.br

**ABSTRACT**  
 A social innovation ecosystem is a set of actors from different social sectors and their environments with legal and cultural norms, separate institutional and state structures, which enable or inhibit the development of social innovations. In this context, several issues regarding information search and navigation can be found. In this paper, we present an observational study where a set of actors in a social innovation ecosystem were monitored and analyzed in order to identify the challenges faced by the actors. Results show the importance of adopting digital ecosystem concepts for an approach in which social innovation actors interact and collaborate through the support provided by a

“Stakeholders with power Stakeholders with purpose Stakeholders with passion Stakeholders with presence”

Keywords: Semiotic, stakeholder, innovation, social interaction, collaboration, leadership, responsibility, organizational learning, infrastructure.

Clatton Drake, I. [2018]. Social Innovation and Collaboration. Identifying and Engaging Stakeholders. (PhD dissertation). (PhD dissertation).  
 License: CC-BY-NC 4.0

### The development of social innovation initiatives is based on the interactions between several actors: citizens, government, companies, non-governmental organizations, and universities.

Alice Vasconcelos  
 UFPA  
 Campos dos Goytacazes, RJ, Brazil  
 alicev@ufpa.br

**1. INTRODUCTION**  
 Social innovation consists of new solutions (products, services, etc.) that aim to solve social problems. These solutions are created through the interaction of different actors, bringing new or improved capacities and relationships, making them possible to better use resources and improving current economic performance capacity [6]. However, social innovation requires actors to have strong skills which facilitate across different innovations and the development process of a single innovation [1]. A number of factors involving the development of social innovation initiatives requires the building of a new environment, based on the convergence and interactions between several actors: citizens, government, companies, non-governmental organizations, and universities [7].

“The study of social innovation ecosystems remains scarce and fuzzy.”

“The study of social innovation ecosystems remains scarce and fuzzy.”

### Government, industry, academia and civil society work together to co-create the future.

Authors: Siskka Wilha, Center for Urban and Regional Studies, Aalto University, Finland  
 Siskka.wilha@utu.fi, siskka.wilha@utu.fi

“Government, industry, academia and civil society work together to co-create the future.”

“Government, industry, academia and civil society work together to co-create the future.”

“Government, industry, academia and civil society work together to co-create the future.”

### Participation in Design between Public Sector and Local Communities

Susanne Backer  
 Aarhus University  
 Dept of Computer Science  
 Aalborgvej 34  
 DK-8230 Aarhus N, Denmark  
 backer@cs.au.dk

“commercial companies which all had government and in particular municipal government as their business areas”

“small groups such as mothers' groups”

“various NGOs”

“caseworkers and planners”

“Civil society: Definition and Theory”

### Participatory design and “democratizing innovation”

Erling Bjergmann, Pelle Ehn, Pre-Anders Hillgren  
 MEDIU - Collaborative Media Institute  
 erling.bjergmann@maib.se, pelle.ehn@maib.se, pre-anders.hillgren@maib.se

“The constellation of stakeholders is not pre-determined”

“What drives the inquiry and which stakeholders should join the exploration were hence determined by the socio-material issue being explored. The participants that aggregated around the matters of concern did so because it had relevance to their practice.”

“What drives the inquiry and which stakeholders should join the exploration were hence determined by the socio-material issue being explored. The participants that aggregated around the matters of concern did so because it had relevance to their practice.”

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“What drives the inquiry and which stakeholders should join the exploration were hence determined by the socio-material issue being explored. The participants that aggregated around the matters of concern did so because it had relevance to their practice.”

### ACM Digital Library search entries

Results for: [All: stakeholders] AND [All: "social innovation"]

Results for: [All: stakeholders] AND [All: "democratic innovation"]

Results for: [All: stakeholders] AND [All: futuring]

Results for: [All: stakeholders] AND [All: futuring]

### Challenges of participatory design for social innovation

A. Ohtani, K. Ohtani, N. Kobayashi  
 Fujitsu Laboratories Ltd.  
 (ohtani, ohtani, noyuki)@lab.fujitsu.com

“Stakeholder list is non-exhaustive”

“Identifying too many stakeholders”

“Previous work, however, warns about two pitfalls: omitting relevant stakeholders and identifying too many groups as stakeholders [11].”

### Caution with defining stakeholders

“BECOMING RESPONSE-ABLE STAKEHOLDERS – PARTICIPATORY DESIGN IN TIMES OF UNCERTAINTIES”

Kristina Lindström  
 Malmö University  
 205 06 Malmö  
 Sweden  
 kristina.lindstrom@hhs.se

“A crucial part of PD projects has been to invite those, often marginalized, who have a stake in the matter at hand into the design processes.”

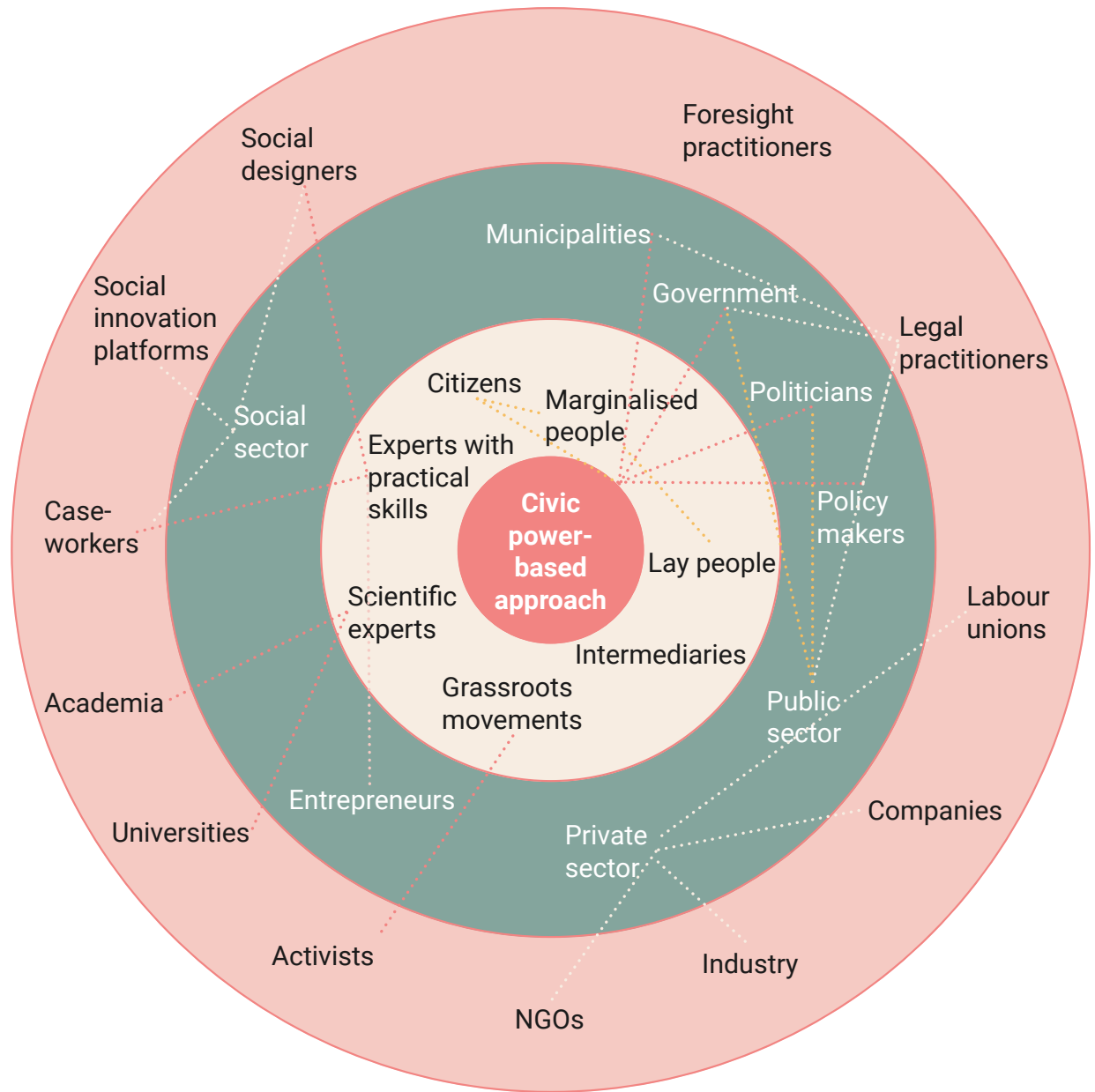
“In recent years a parallel strand has developed within PD that works with less predefined stakes and stakeholders of. [12, 11].”

“Stakes and stakeholders emerge through various engagements in democratic design experiments”



# Appendix D: Stakeholder Onion Diagram

What are the right boundaries for defining a target group for democratic innovation? In the context of social innovation



**Legend**

- Centre
- Direct interaction
- Decision-makers
- Wider environment
- ⋯ Relation within the same layer
- ⋯ Relation to adjacent layer
- ⋯ Relation skipping one layer

**Conclusions**

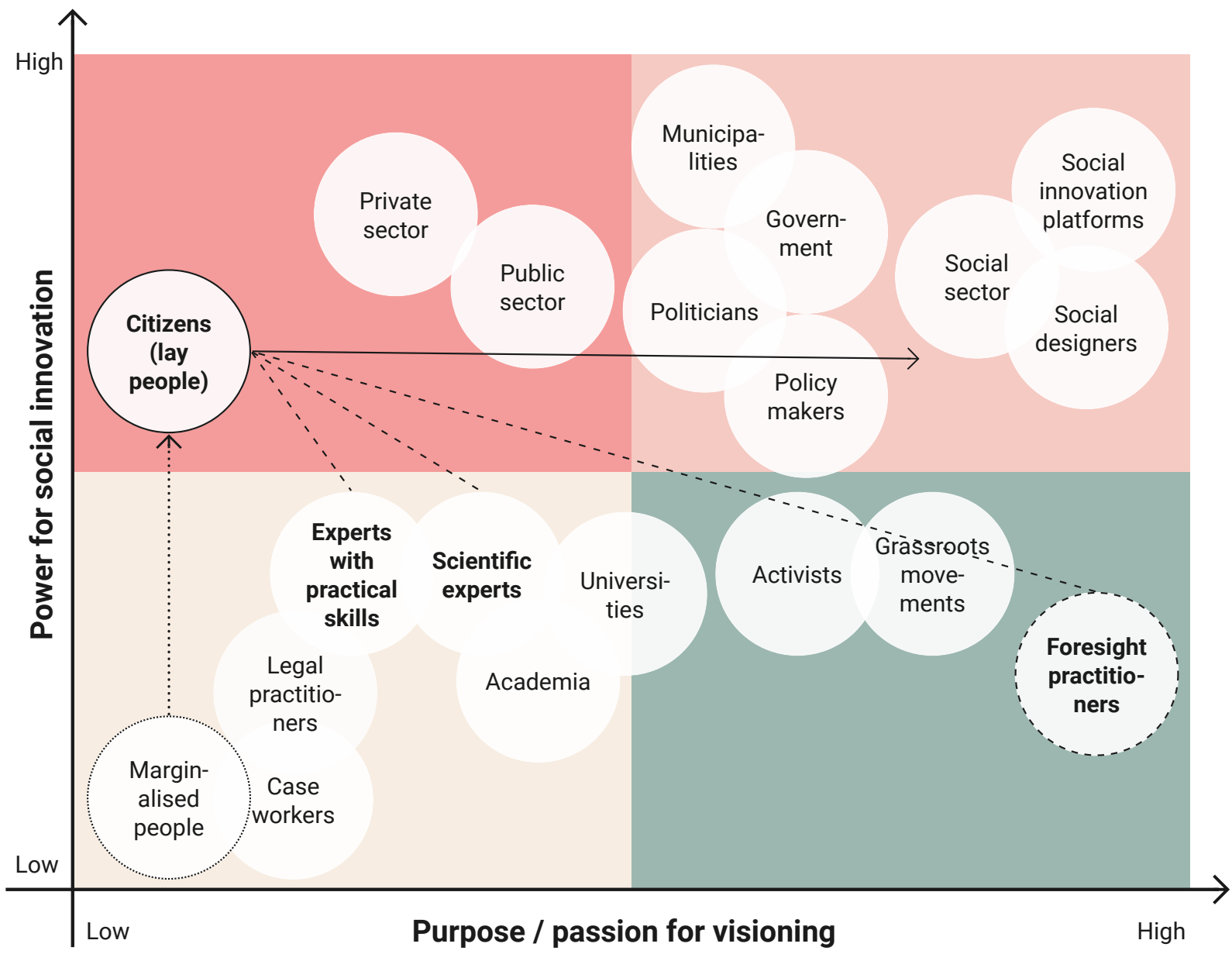
It would be preferable to have the social institutions in the decision-makers layer (closer to the centre).

Foresight practitioners are not included in the entanglement yet.

Based on the sources in Appendix C

# Appendix E: Stakeholder Matrix

What are the right boundaries for defining a target group for visioning? In the context of social innovation



**How to include the most isolated groups in visioning for social innovation?**

Make marginalised people part of the citizens (lay people) group, and encourage that relatively powerful group for visioning. Inform the lay people with knowledge through experts. Use the expertise of foresight practitioners by making it part of visioning for social innovation.

# Appendix F: Benchmarking (approaches and communities)

## Community Assembly Toolkit (Global Assembly)



From book 'Nu is het aan ons' written by Eva Rovers

## Approaches

Information, character and discussion cards

One broad-focused futuring exercise

### Activity 02 Expressing Hopes and Fears

**Goal:** To encourage big ideas about the future (personal and collective) by focusing on hopes, fears and aspirations; to inspire empathy between participants.

**Instructions:** Ask all participants to close their eyes and visualize their life in 10 years time. Guide them with questions like: Who are you with? What are you working on? What affects you the most? How is climate change affecting you? After the visualization, all participants draw their vision. Participants choose one word that expresses their vision.

**Tip:** These can be collated in a Word Cloud.

## Imagination Activism approach (Rob Hopkins podcast From What If to What Next)



Imagination Activism in citizens' assemblies

Under her leadership, the Camden council has made citizen power and participation a priority. The Camden council held the first climate emergency citizen's assembly in 2019.

Change needs to come bottom-up from communities (decentralized)

To convince corporates to do collective good instead of pleasing shareholders, a whole economic shift is needed

Need for municipal imagination



The Impossible Train Story exercise

Moral Imaginations

Phoebe and Georgia are applying Imagination Activism in local council Camden

Phoebe Tickell founded research & practice organization Moral Imaginations: brings science, complexity and imagination together to develop a socio-political practice, that brings ethical values, long-term thinking and more-than-human thinking alive via the imagination. Created in 2020 to make societal change, by training a movement of Imagination Activists powered by imagination and vision, and equipped with the tools and thinking to build new systems.

Phoebe Tickell

Georgia Gould

Social entrepreneur, pioneering an approach to collective imagination to change policy, governance and systems. Been raising awareness around the importance of collective imagination practice in the UK and beyond, making an evidence-based argument for why imagination is key in creating political and economic systems that work for people and the planet. She has worked with leaders, governments, boards, investors and multinational corporations to effect change.

## How to Future (Smith & Ashby)



This book equips you with valuable tools which will empower you, your team and your organization to anticipate whatever futures emerge

With a baseline of accessible frameworks, tools and questions, almost anyone can bring an appropriate and sufficient level of futuring to their task or challenge of choice.

### Stake

@Stake: A Game to Facilitate the Process of Deliberative Democracy

**Abstract**  
Public engagement in government decision-making is often limited to a lack of diversity, underutilization of digital tools, and unclear feedback mechanisms – a problem made acute in the context of rapidly changing needs of most in American government (2). But the potential for more inclusive, transparent, and iterative deliberation and decision-making is a pressing need for our time. @Stake is a game designed to address these needs through a series of structured, iterative, and collaborative exercises. The present research explores the use of @Stake within a transnational futuring process, presenting evidence that it leads to increased engagement and creativity in the civic process.

**Author Keywords**  
Civic engagement, games, play, deliberation, government

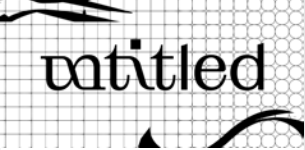
**ACM Classification Keywords**  
H.5.2, Information interfaces and presentation (I5.2)

**Introduction**  
The stakes in which people interact with their United States occur through many different channels: from voting, to attending a town hall meeting, to

A game to facilitate deliberative democracy

## Communities

### Untitled community



UNTITLED - Experimentation  
This decade change works. UNTITLED is an approach of social experimentation to era.

Roope Mokka

### Doughnut Economics Action Lab



It's an approach to a different kind of economic paradigm

### The Things We Did Next



Home/About | The Things We Did Next  
The Things We Did Next is a collaborative practice that generates a series of interconnected artworks and projects based on collectively imagining multiple...

### Waag Futurelab



Waag | Expeditie naar planet B  
Als Futurelab voor technologie en samenleving gaat Waag de komende jaren op expeditie naar de toekomst. Doe mee!

### Tafelgenoten (Jeanneke Scholtens)



Lunch with strangers for having a good conversation that surpasses the superficial

There is need for this because of the complexity of digitalisation and globalisation

The world becomes smaller and manageable

Trend: human need for contact. Because of climate crisis, war, energy crisis and polarisation. Stuck in neoliberalism (growth and consumption) -> no attention for real contact with others in this strong individualised society.

- Introduction
- Cheers to someone who can use it (icebreaker)
- Theme (like loneliness or the meaning of life)
- Ask what action they want to bring and apply to themselves

Tafelgenoten | Lunchen onder het genot van een goed gesprek  
Tafelgenoten brengt ritueel in de vorm van een vast recept en hopelijk een beetje zin. Al zou het maar in lekker eten zijn. Meld je aan!



# Appendix G: Benchmarking (tools)

**Connecting Worlds for a Better Future**  
(DesignLab University of Twente 2022)



Good for starting dialogue and being actively reflective

But then what?

Ingredients are given, but you still have to figure out the rest yourself (no "how to write a futurist story")

**Foresight 2019 (dlab)**



Good for starting dialogue, but no consequence

Based on trends

There is no self-imaginary factor here as the scenarios are written out for you

**The Futures Bazaar (Situation Lab)**



"Public Imagination Toolkit", from Stuart Candy (also behind Future Thing) and Filippo Cuttica

Looks like it focuses a lot on making intentionally weird future artefacts, rather than bigger societal issues or community aspects

**Future Thing (Situation Lab 2015 /Candy & Watson 2014)**



Text-based

Indirectly based on Future Thing

**Peek 2040-2060 edition (Raskob & Salinas 2020)**



Game element present

Lengthy

**Manifesto! Tech edition (Words in Freedom Project 2019)**



Based on Future Thing

Input for writing a manifesto

Requires to write

**The Work Kit of Design Fiction (Near Future Laboratory)**



Product-focused

**Rough Planet Guide (Climaginaris)**



Fictional travel guide

Narrating climate futures

**Black Mirror**

Video / scenario based

Narrative

Pre-defined: no imagination needed

## Tools

Complicated



## Conclusion

A futuring tool should help to imagine the unimaginative: being a bridge to visionary thinking.

Show what people could do with the ingredients. Not a passive story, not highly determined. More towards a vision.

## General observations

- Most tools combine trends and are in the form of card decks.
- There is not much visual aid, many words.
- It feels like the tools are shuffling around the present. Unexpected combinations make you think creatively, but not necessarily help you imagine the future.
- Many tools incorporate writing. Does futuring mean creating stories? The ingredients are given, but you still have to figure out the rest yourself (no 'recipe'/how to).



# Appendix H: The Mystery Box

# Picture a value based future

How can a democratised futuring exercise guide people from speculation to visioning?

Research probe



Research probe

## 1 the thought exercise

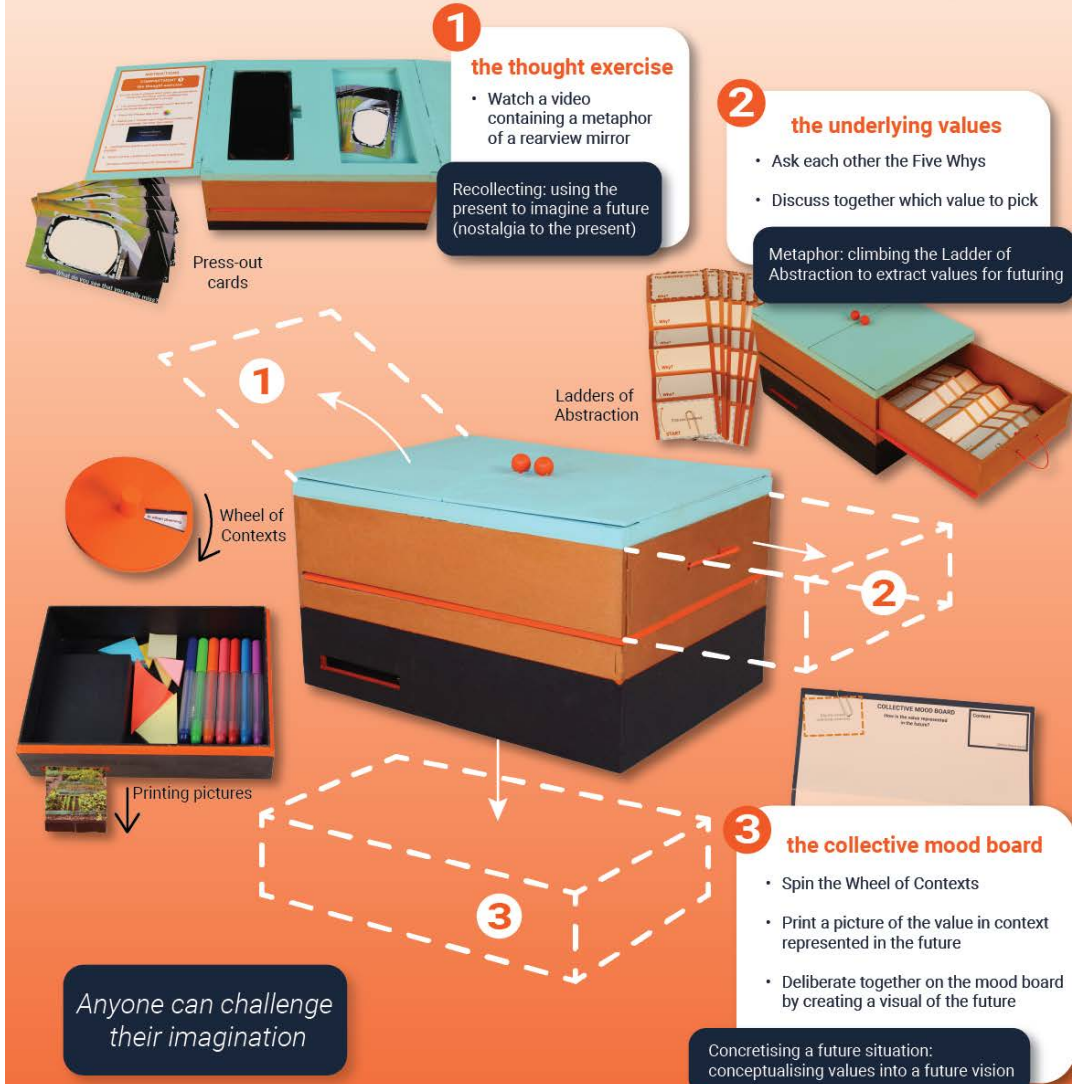
- Watch a video containing a metaphor of a rearview mirror

Recollecting: using the present to imagine a future (nostalgia to the present)

## 2 the underlying values

- Ask each other the Five Whys
- Discuss together which value to pick

Metaphor: climbing the Ladder of Abstraction to extract values for futuring



## Democratised Future Visioning

Elke van Dael - M1.2 Design Research Project  
Coach: Dan Lockton




# Appendix I: Instruction cards

## INSTRUCTIONS

### COMPARTMENT 1 the thought exercise

*Are you ready to explore what values you would like to bring into the future and to challenge your imagination? Let's go!*

1. Let one person lift the phone out of the box and push the home button to unlock.
2. Press the Photos app icon. 
3. Watch the 1 minute video together (at least make sure that everybody can hear the sound).



4. Each person grabs a card and writes down their thought.
5. Press out the smaller card and keep it with you.

*All steps completed? Open the bronze drawer...*

## INSTRUCTIONS

### COMPARTMENT 2 the underlying values

*In this part you are going to find out what each one of you personally values. How? By climbing 'the Ladder of Abstraction'.*

1. Each person gets a ladder. Clip your card to the bottom of the ladder.
2. Make pairs (or trios) and ask each other 5 times why. Keep the answers short and fast-paced. At the top of the ladder write down the underlying value.
3. Repeat until everybody has had their turn.
4. Tear off the tops of all ladders and look at the cards together.
5. Discuss together which value you as a group find most interesting to explore further. Choose one. You will focus on this value in the next part.

*All steps completed? Lift off the bronze part of the box from the dark bottom...*

## INSTRUCTIONS

### COMPARTMENT 3 PART 1 the collective mood board



*Now, you are going to concretise the chosen value into a future situation. Some guidance is provided by the following steps:*

1. Fold open the Collective Mood Board sheet and take the orange 'Wheel of Contexts' out of the box.
2. Let one person spin to determine the context. If you feel that the context doesn't fit the chosen value quite right, spin again until you have agreed on a context.
3. Take a moment to individually think about what situation you can imagine that manifests the value in the context. How do you see the value represented in this context in the future?
4. Each person is going to google and print a picture that helps them tell the rest of the group what they imagine. The picture can be anything.

*When someone already has an idea, follow the instruction card Part 2.*

## INSTRUCTIONS

### COMPARTMENT 3 PART 2 the collective mood board

5. Get the phone out of compartment 1, unlock, and press Google. 
6. Google a picture, enlarge it, and make a screenshot of it by pressing the home button and the right button simultaneously.
7. Press the home button to go to the HP sprocket app. Click on your picture and press the 'print' icon. Take your picture out. 
8. Repeat steps 6 and 7 until everyone has had their turn.
9. Take turns telling each other about how you see the value represented in the context in the future. In the meantime, stick your pictures on the Collective Mood Board. Feel free to annotate them / draw lines with the markers / put additional insights on the sticky notes.

*Congratulations! You now have pictured a future based on an underlying value and conceptualised it together in this mood board.*

## Appendix J: Thought exercise video and text



### 'Forward in Reverse'

A thought exercise

A futuring exercise  
Vimeo

<https://vimeo.com/831877092>

#### Instruction video text

Imagine you are 20 years into the future. Even though you are on the same planet, at the exact same spot, nothing is like you were used to. A big crisis forced humans to make radical changes to the way they lived their lives. Society and its relation with nature have transformed completely due to collective efforts.

In your thoughts, you are remembering the past because you feel nostalgic. To use a concept from the past, you imagine you are driving a car. You do not know where you are going. However, when you look in the rearview mirror, you see glimpses of the past you remember.

What do you see that you really miss? That thing that makes you think "life was good, back in the days".



## Appendix K: Semi-structured interview questions

How did you experience futuring with the research probe in general?

Do you feel that the metaphors present in the exercise (rearview mirror, ladder) add anything?

How much do you value that this is a group exercise? Or do you imagine doing this exercise only by yourself as well?

Did the assignment to print a visual help you to express the future situation you imagined?

What difficulties did you encounter while doing the futuring exercise?

Do you have any thoughts/remarks/suggestions that you would still like to share?

### ***How can a democratised futuring exercise guide people from speculation to visioning?***

1. *How do citizens experience futuring with the research probe?*

- *With help of metaphors*
- *Collaboration and deliberation*
- *Using a visual to express your thoughts on the future*
- *Difficulties*

2. *Are the imagined future situations considered to have visionary criteria?*

3. *Has the perceived self-efficacy of the participants increased after interaction with the research probe?*

# Appendix L: Before and after questionnaires

## Before Creative Future-visioning Workshop

\* Vereist

1. What is your age? \*

2. What is your gender? \*

3. How would you describe your job profile / occupation? \*

4. How confident are you in imagining future situations? \*

I feel very insecure    I feel insecure    I feel a bit confident but also a bit insecure    I feel somewhat confident    I feel confident

5. How much do you think you can change the future? \*

I don't know at all what I can do    I don't feel like I have the power to influence change    I'm not sure if I have the power to influence change    I feel like I could make a difference somehow    I think I can influence change

## After Creative Future-visioning Workshop

\* Vereist

1. How confident are you in imagining future situations after this workshop? \*

I feel very insecure    I feel insecure    I feel a bit confident but also a bit insecure    I feel somewhat confident    I feel confident

2. How much do you think you can change the future after this workshop? \*

I don't know at all what I can do    I don't feel like I have the power to influence change    I'm not sure if I have the power to influence change    I feel like I could make a difference somehow    I think I can influence change

3. Do you believe the future situation you imagined is plausible (reasonable/achievable)? \*

Strongly disagree    Disagree    Neither agree nor disagree    Agree    Strongly agree

4. Comment section (optional)

5. Do you believe the future situation you imagined is preferable for a future society in general? \*

Strongly disagree    Disagree    Neither agree nor disagree    Agree    Strongly agree

6. Comment section (optional)

7. Do you feel the future situation you imagined is there to generate and/or direct change? \*

Strongly disagree    Disagree    Neither agree nor disagree    Agree    Strongly agree

8. Comment section (optional)

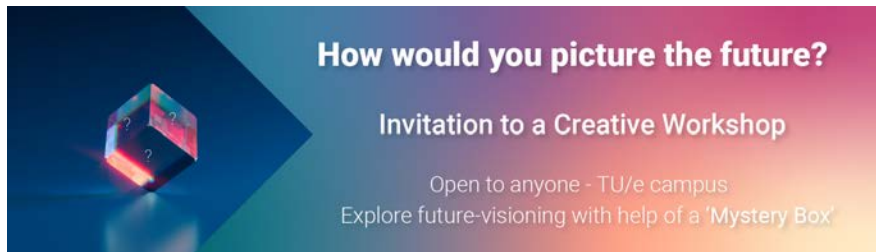
9. Do you feel the future situation you imagined is a utopia (meaning that it is the very best future you could have imagined)? \*

Strongly disagree    Disagree    Neither agree nor disagree    Agree    Strongly agree

10. Comment section (optional)

# Appendix M: Participant recruitment



## How would you picture a future that is based on your personal values?

If you have no idea but are willing to challenge your imagination (or if you do have some idea), **join this creative workshop and find out for yourself!** With help of a 'Mystery Box' you will be exploring what values you would like to bring to the future. The session will be in a group from 3-5 people and it will last max. 1,5 hours. There is no preparation needed.

Is your curiosity sparked? Please sign up via this form, or forward it to anyone you know that might be interested: <https://forms.office.com/e/bKNb5Cz9LM>

Details in short:

- What: Creative future-visioning workshop
- Who: suitable for anyone, everyone can participate!
- Where: TU Eindhoven campus
- When: May 25, 30 or 31; what fits you best

*This workshop is part of my Industrial Design master design-research project, focused on how imagining futures might stimulate democratic innovation and initiate societal change.*

If you have any questions or if you would like to know more, please get in touch.

Kind regards,

**Elke van Dael**

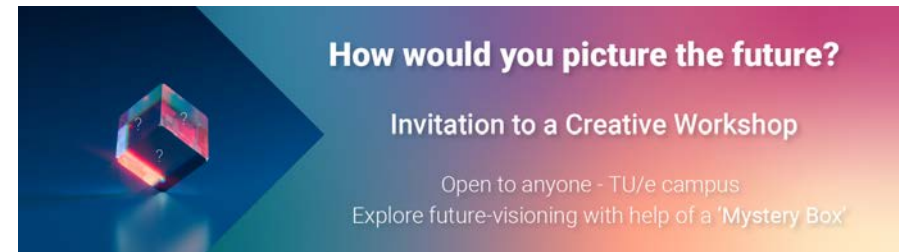
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L <https://www.linkedin.com/in/elkevandael/>



## Hoe zou jij je een toekomst inbeelden die gebaseerd is op jouw persoonlijke waarden?

Als je geen idee hebt maar je verbeeldingskracht wel een keer wil uitdagen (of als je wel enig idee hebt), **neem dan deel aan mijn workshop toekomstdenken en kom er zelf achter!** Met behulp van een 'Mystery Box' zul je ontdekken welke waarden je graag zou willen meenemen naar de toekomst. De sessie zal plaatsvinden in een groep van 3-5 personen en zal maximaal anderhalf uur duren. Er is geen voorbereiding nodig.

Is je nieuwsgierigheid aangewakkerd? Schrijf je in via dit formulier, of stuur het door naar iedereen die mogelijk geïnteresseerd zou kunnen zijn: <https://forms.office.com/e/bKNb5Cz9LM>

In het kort:

- Wat: Workshop Creatief Toekomstdenken
- Wie: geschikt voor iedereen!
- Waar: TU Eindhoven campus
- Wanneer: 25, 30 of 31 mei; wat je het beste uitkomt

*Deze workshop is deel van mijn Industrial Design master onderzoeksproject, gefocust op hoe toekomstdenken democratische innovatie en maatschappelijke verandering teweeg zou kunnen brengen.*

Als je vragen hebt of meer zou willen weten, aarzel niet om contact op te nemen.

Met vriendelijke groet,

**Elke van Dael**

Master student Industrial Design  
Eindhoven University of Technology

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P <https://www.elkevandael.com/>

L <https://www.linkedin.com/in/elkevandael/>





# Appendix O: Winnowed data session 1

## Winnowed data

### Process coding with observation notes session 1

P2 suggests to open both orange balls	P2 reads the instructions out loud	P1 takes the phone and puts it against the box so all can see the video. It glides down two times	P2 only sees that the card is a rearview mirror after having watched the video	P1 gives a summary of the assignment	They tear out the cards first while thinking
P1 reads the rest of the instructions out loud	P1 asks somebody else to open the drawer	P3 reads out loud all the instructions of compartment 2 at once	They share what they have written down with each other	P3 gets the ladder and the 5 whys quite well	After P3 asked P1 the first why, P1 asks herself 4x why
P1 thinks that one of the stairs already is her underlying value	P3 and P2 help with thinking along: "creativity is never correct"	P2 admits that she already walked the stairs in her head	P3 says that it matters if someone else asks the whys or if you do it yourself	P2 says to already know the top value and to have been influenced by the answers of P1 but that it does not matter	The whys are going smooth in conversation
P2 reads the rest of the instructions out loud	They discuss which value to pick and deciding goes smooth	They are surprised by the bottom part of the box	P1 is not super excited about the context but "it is what we got, and it does not match"	They all have an idea within one minute	It is not quite clear if they have to share their ideas first or first print a picture
They find printing the picture fun	P3 asks the others to help with printing the picture	P2 elaborates on her idea and refers back to her ladder	P2 explains quite quick and clear	P3 can also make it short with discussing her idea	P1 discussed her idea which is not a solution but P2 and P3 think along
While discussing they do not annotate on the mood board yet	They annotate the pictures while discussing somewhat further	P3 would want to relate their individual ideas because she sees connections	P2 says they can draw lines and put additional sticky notes	They discuss while pointing at the mood board	They start thinking in solutions
P3 starts to get enthusiastic because she values connection and it relates to her value health	The participants are surprised by the compartments	The participants have no difficulty with coming up with something they miss	The participants speak with the metaphors "you can also walk down the stairs of the ladder"	The participants really have a conversation when trying to come to their underlying values	P2 deliberately Googled a picture of a train station with individualism
At first their ideas are not solutions, but when they discuss the relations between their ideas on the mood board, they start thinking in solutions					

### In vivo coding from interview session 1

<i>Het was heel duidelijk stapsgewijs</i>	<i>Het spreekt voor zich</i>	<i>De ladder helpt wel echt om in stapjes te denken</i>	<i>De mirrar kan op allerlei manieren om even terug te denken in de tijd, maar het is een prima metafoor.</i>	<i>De beweging naar de toekomst koppelt voor mij, ik vind het prettig dat er actie in zit</i>	<i>En wat de box bij mij aanzet is nieuwsgierigheid heel erg, ik ben benieuwd</i>
<i>De box helpt om in de mood te komen</i>	<i>Ik ben van de verbinding, dus ik vind het prettig dat het een groepsopdracht is</i>	<i>Ik denk dat je in je eentje dit ook had kunnen doen, maar dan mis je de inspiratie van anderen</i>	<i>Ik denk dat het sparren wel waardevol is</i>	<i>Een gesprekspartner in zo'n ladder spiegelt, in plaats van dat je alleen maar in je eigen cirkel zit</i>	<i>Het resultaat is volgens mij minder als je het alleen doet dan als je het met een groep doet</i>
<i>Ik vind de groep wel groot genoeg, met drie is eigenlijk een hele fijne groep in plaats van twee</i>	<i>Ik ben een beelddenker, dus ik heb het echt nodig om een foto te printen</i>	<i>Woorden helpen mij niet, maar plaatjes wel, dus voor mij is het wel helpend</i>	<i>Het helpt ook om de beelden van de ander te zien</i>	<i>Tijdens het zoeken van een plaatje gaat mijn idee nog een keer op en neer, ik laat het even landen. Is dit precies wat ik bedoel?</i>	<i>Ik denk op zich dat ik mijn situatie ook wel had kunnen schetsen zonder plaatje. Het was niet per se nodig in deze situatie</i>
<i>Maar het draagt wel ergens aan bij, om die plaatjes zo naast elkaar te zien</i>	<i>Ik kan me wel voorstellen dat misschien in een andere context de plaatjes printen wel waardevol was geweest</i>	<i>Over het algemeen geen moeilijkheden ervaren</i>	<i>Een goede voorbereiding van een brainstorm is Natuurlijk gewoon de helft van je resultaat of meer</i>	<i>Dan gaat het ook iets opleveren, daar ben ik altijd wel van overtuigd</i>	<i>Het is een grote verandering die nodig is, maar ik geloof dat je kan beginnen met 1 kleine stap</i>
<i>Als we de gedragsverandering in gang kunnen zetten, kunnen we veel bereiken in meer verbinding hebben</i>					



# Appendix P: Winnowed data session 2

## Winnowed data

### Process coding with observation notes session 2

P4 reads the instructions somewhat out loud	They take the cards out first, then they watch the video	P4 and P5 only notice now that it is a mirror. P4: "Oh it's also in the mirror, funny"	They keep reading the instructions carefully and press out the smaller cards	P4 opens the drawer and closes the top	They both read the instructions for themselves
They ask each other who wants to go first	P4 asks what P5 wrote down as a thought	P5 now realizes that she has to write it down and does so on her own card	P4 keeps asking the why until the 5th time	P5 thinks that the underlying value is something different than her 5th answer	P4 elaborates on what she would miss
P5 asks P4 "why?"	P5 helps with mentioning agency	P4 takes some more time with the 5th why, P5 jumps in to help	P4 doubts but picks autonomy and interaction	When P4 lifts of the top she is surprised: "Oh, surprises me how this all unfolds."	They read the instructions together quietly
P5 gets out the mood board	They laugh very hard because the context they turn is 'with parenting'	After some consideration they say they can go with the context parenting	P5 doesn't understand quite how the future is different, is it sustainable or all technological?	P4 answers P5's question with her interpretation	Now they discuss from which perspective they see autonomy
P5 doubts if they should turn a different context, but they keep brainstorming	They share with each other how they grew up	Very future-oriented discussion	P5 searches for quite a specific picture: a baby in an autonomous vehicle	P4 says they can also draw the baby in	They look at Google together and laugh at the pictures
P5: "Where is the picture going to come out, is it going to come out here?" P4: "That's awesome"	P4 looks for a picture and finds a disturbing one, they laugh together about it	While waiting on the printer they continue their discussion	P4 asks if she can glue her picture to the mood board	P4 draws a frame around the baby picture jokingly	The future they sketch is concerning
They talk about it together and discuss this future for 15 more minutes	P5 refers back to their underlying values	After a long discussion about what this future would look like, P4 asks whether they still want to add something to the mood board	They add that everyone is your brother/sister (like they discussed), to add a supportive and positive note to it	They use the sticky notes extensively and summarise their topics on the mood board	The participants like interacting with the box
The participants help each other when they are doubting with thoughts	A duo goes through the workshop quicker	They also do not express their imagined future apart, but together (while looking from a perspective from both their values)	The participants struggle with the context because they think the value 'autonomy' and the context 'with parenting' is funny	But they have an in-depth and creative discussion on the future of parenting in an artificial world	P5 needs some time after the thought exercise to think about what they would miss
The participants are actually constructing a concerning future where AI has a say over babies	They laugh about it but they also discuss it quite seriously and think deeply about what the consequences would be	They try to make it a better future ("the AI gives you options, but you optimally get to choose"			

### In vivo coding from interview session 2

It was very fun to do	And it's also taking you step by step, so it's not too big of a thing	You can take a small step and then another question and then suddenly you're talking about a situation you couldn't have imagined 20 minutes before	The steps overall were clear	I was always really just excited about what was going to come next	Sometimes in workshops the focus is just on the people, which is fine, but here the box was more the focus and so we had this interesting thing to explore together
Exploring together made it interesting, a way to interact with someone that I didn't know	The mirror was very helpful	The question 'what would you like the world to be in 20 years?' is more difficult than 'what would you like to keep from what you have now?'	For me it was more approachable and the ladder helps to kind of deepen	I think it's easier if you write for each other because your thinking and writing did not match	The mirror for me worked because for some reason it evoked emotion
It helped me to really get down to what that one thing would be with just the image of this reflection being there.	I definitely could not have done this alone	The questions you ask each other are quite important	It really helped because otherwise you're just in a cycle in your own brain	I guess in theory, if you wanted to give someone this box alone, they could do it	But to me, this particular outcome and the richness of it would have been impossible without the interaction
It's somehow easier to reflect when someone catches what you say and then takes part of it and then gives it back to you and gives their spin on it.	The close listening and exchange was really valuable	Printing a picture helped to express	It is actually quite scary if you type in your thought that you find the image that is already closer than you maybe want it to be in our situation	I think we went the opposite of utopia	I think it was good because then even in this circumstance forced me to think how can our values possibly survive?
And when we were able to come up with the final answer that made me feel a little bit better	For me the difficulty was with the context	Once we had to take the value and then put it into the context, I was taken out of the process for a while	If I didn't have my partner to work with, then it would have been more difficult to really concretise the context	It's good if somebody in the group can say, you know, this is going to be. Because once that was concrete, then I could move forward again	Everything else flowed for me perfectly
I liked the context	And I liked the randomness of the context	We were trying to think about how we would come at it either from the perspective of the parent or the child	We just started throwing ideas out	I think that the exercise itself is good, the way it's done	For some reason I just fell out. And I think that's a reason that it's good to have the group
But maybe if you weren't here, maybe eventually I would have said, okay, I have to choose something	It was difficult to think how our values are going to survive in the kind of dystopia we described	I felt like I needed a positive spin in this scenario. Otherwise I couldn't leave here and feel good	For me it helps to know that this is a possibility	I know what to do now so this doesn't become the reality	To think out the worst case scenario also gives the steps to not end up in the worst case scenario
I really like that we chose this kind of doom like terrible worst case scenario because it really presses you to think about your values and how would your values really survive in this kind of scenario	AI is here and we do have to think about how our values are going to survive	I like this approach because I feel like it forced me to really say, okay, this is the part of my value that really needs to always be there			



# Appendix Q: Winnowed data session 3

## Winnowed data

### Process coding with observation notes session 3

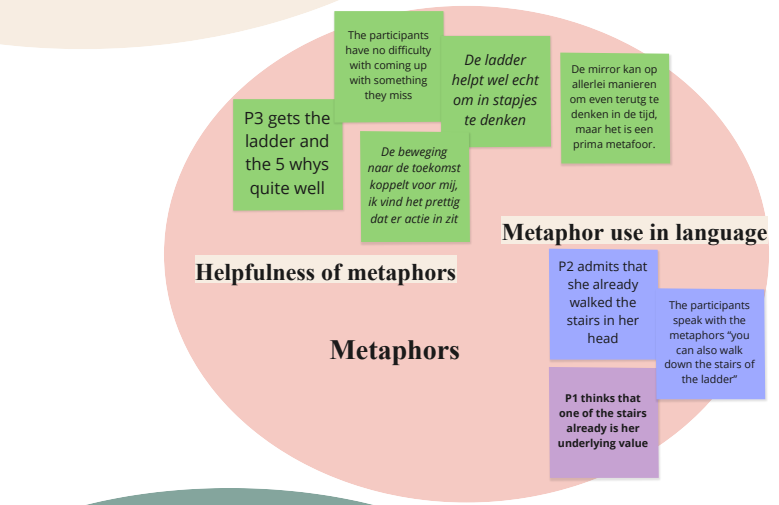
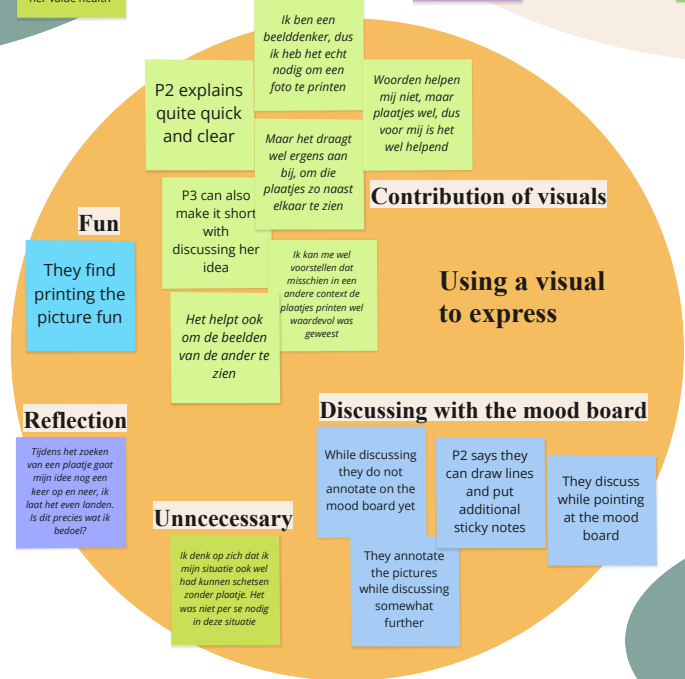
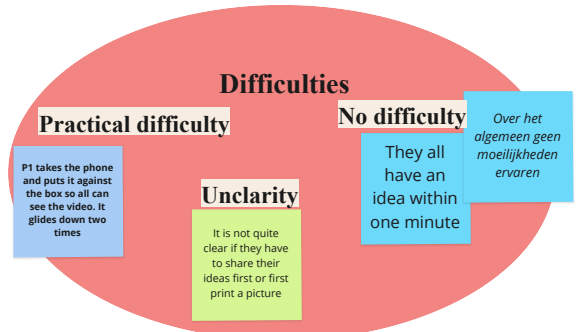
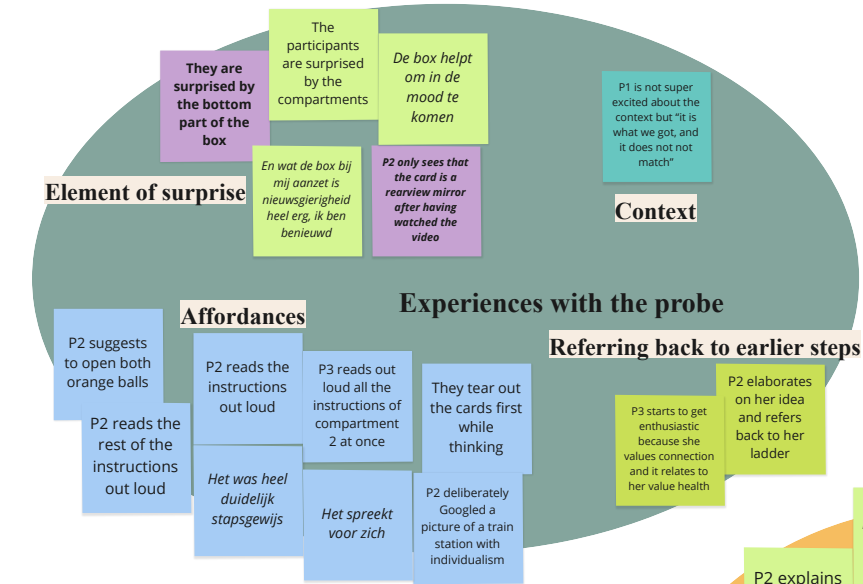
P6: "Oh how nice, a sort of escape room."	P6 reads the instructions all at once out loud	P9 asks is P10 can translate it to Dutch	The participants put the phone against the box and gather around closer to watch it all	After the video they sit in silence and think for a moment, and write on the cards (=/- 2 minutes)	P7 had two thoughts
P6 says they need to open the bronze drawer	P6 is searching how it opens, asks P10 if it opens on their side	P10 reads the instructions out loud while translating	They make duos and trios like indicated and the room fills with conversation	P7 lets the others decide which one they should pick	P6 asks which one P7 finds most important
P6 is aware that she is suggesting for P7, which P6 mentioned out loud	They write their whys on each step of the ladder	P9 struggles a bit with the whys, P10 helps	P7 says to have the intention to think along, asks if that is okay	P6 and P9 express that they find it difficult, they get an existential feeling	P8 is the last person to express and everyone listens in
While P6 reads and translates the instructions, P10 and P7 get out the mood board and the wheel of context as indicated	P10 spins 'in the justice system'	They are not enthusiastic because they do not know a lot about the context	They quickly decide to spin again	P10 spins 'in relation to nature'. P7: "we should be able to think of something with that"	P8, 7, 6 and 9 use the back of the ladder to write down their idea
P7 googles a picture and get the instructions card part 2 to read what she has to do next	P7 makes a screenshot	When the printer starts to make a sound, everyone is surprised and laughs. P7: "I did not see that one coming"	P7 helps P6 with enlarging the picture and making a screenshot	After deciding P6 is in doubt and wants another picture	When the second picture is being printed, P7 continues with saying the instructions out loud to already let the rest know what is coming
P8 smiles when the printer makes a sound again	P6: "we already have nice pictures."	P8: "it is quite hard to find a picture of what you have in your head."	At first it was quiet when the fourth person finds a picture, but P6 starts a conversation to get to know P8	P10 asks P9 how she makes a screenshot	P6 says she is happy that P9 chose that picture because she was doubting to get something like that
P7 and P9 turn out to have the same picture	While printing the last picture, P7 starts the round of explaining	The rests suggests P7 puts the card on the mood board but does not stick it yet, to see how they want to relate them to each other	P6 starts explaining: "I had a lot of associations with meaning and nature"	When P8 elaborates P8 puts the picture already down on the mood board	P9 has a unique perspective of how to get children involved in the connection with nature
P10 adds meditation to it, and how humanity will get nature more and more inside	P7: "I see a sort of relation in it."	The other participants recognise that and they discuss what the line is going to be	P7: "It is a nice future if you see it this way"	P6 writes down with permission of the others	The participants gapsed when they lifted off the top part of the box
When asking each other why, it might be easier to let the listening person write down the steps of the ladder	The participants think printing the picture is fun	When they talk in duos/trios in exercise 2, they overhear the other group and feel influenced/distracted by it	The participants ended up with a future they liked although P7 started off with a dystopian hint at first		

### In vivo coding from interview session 3

<i>Ik vond het wel verrassend doordat je elke keer iets moest opendoen</i>	<i>Het is inderdaad een beetje escape room gevoel</i>	<i>Ik vond dit van de waardes ook wel een leuke oefening, met doorvragen</i>	<i>Het heft mij ook wel verrast in hoeverre je echt meteen tot een concreet toekomstscenario kwam</i>	<i>Als je dan het eerste zo opent, dan denk je, waar gaat het heen?</i>	<i>Nu ik dit mood board zo zie, dan heb ik ook meteen een soort beeld in mijn hoofd</i>
<i>Had ik van tevoren niet verwacht</i>	<i>Ik sluit aan dat het escaperoomachtige een leuke toevoeging was</i>	<i>Maakt het spannend en tegelijkertijd toegankelijk</i>	<i>Dat je in het beging denkt van oh, wat gaat er nou komen?</i>	<i>Dat je ook nieuwsgierig bent en geïnteresseerd wordt om dat je niet van tevoren al weet van deze stap gaan we zetten</i>	<i>De vormgeving is gewoon heel speels en leuk</i>
<i>Als je een een willekeurig persoon van tevoren zou vragen, kan je mood board maken dat heel veel mensen denken van niet</i>	<i>De fotos vind ik ook heel creatief bedacht</i>	<i>Ook het verrassingseffect van dat de foto daaruit kwam</i>	<i>Ik vond de achteruitkijk spiegel wel heel goed</i>	<i>Ik stond niet echt bij de ladder stil omdat je er dieper op ingaat</i>	<i>Iedereen die auto rijdt kan zich vinden in de achteruitkijkspiegel</i>
<i>De oefening de why doorvragen was wel een goede stap maar ook de moeilijkste stap</i>	<i>Bij de ladder moesten we echt even aan</i>	<i>Voor mij is het wel echt nodig eigenlijk om even met zijn tweeën te zitten want ik kan niet helemaal niet goed afsluiten</i>	<i>Eén op één doen kan ook maar dat hangt af van de groepsgrootte</i>	<i>Het was wel mooi om het zo in twee en drietallen te doen, dan verlies je geen tijd en aandacht</i>	<i>Tijdens de ladder invullen vond ik het moeilijk, maar uiteindelijk hadden we allemaal een waarde waar we trots op waren</i>
<i>Misschien hoort die struggle er ook een beetje bij</i>	<i>Er zijn woordenlijsten die helpen uit te drukken wat je voelt, dat zou kunnen helpen om het juiste te omschrijven</i>	<i>Toen zei jij zingeving en dan was ik zelf niet op dat woord gekomen</i>	<i>Misschien kom je er als groep uit, maar anders zou zo'n lijst wel helpen</i>	<i>Uitwisseling van ideeën was waardevol</i>	<i>Je hebt een idee en daar vragen mensen op door of je hoort anderen</i>
<i>Samen voortbouwen en interactie zou nog meer kunnen</i>	<i>Als je nog een stap verder kan met het met het uiteindelijk beeld dat je dat dan weer terugbrengt naar het hier en het nu</i>	<i>Dan kan je het ook toepassen binnen een organisatie, kijken wat we er concreet mee kunnen gaan doen</i>	<i>Het was natuurlijk heel algemeen</i>	<i>Als je niet echt samen een onderwerp hebt, dan is dit een goede exercitie om te doen om in de toekomst te kunnen kijken</i>	<i>Maar als je dit binnen je eigen organisatie wil toepassen kan je nog niet echt iets met dit toekomstperspectief</i>
<i>Moet je die volgende stap maken, het weer terugbrengen naar het hier en nu en concreet maken</i>	<i>Ik denk wel dat het helpt dat je voor deze oefening met de context prikkel uit om out of de box te denken letterlijk</i>	<i>Dit is een goede warming up om de breedte in te gaan</i>	<i>In een organisatie kun je het wellicht met je eigen content aanpassen</i>	<i>We hebben er best een gedeeld verhaal van kunnen maken op het einde</i>	<i>Maar die extra stap naar hoe die toekomst er dan echt uitziet mist nog</i>
<i>Voor mij helpen die plaatjes wel om al te zeggen van, ik denk dat ik dat belangrijk vind en ik denk dat al zo iets moet zijn</i>	<i>De foto printen heeft heel veel toegevoegd</i>	<i>De foto printen maakte het isueel en concreet, toen kon ik er wat mee</i>	<i>Het verrijkte de lijn toen we het erover hadden</i>	<i>Zelf zoeken op Google is heel toegankelijk, want niet iedereen kan tekenen</i>	<i>Dat je het visueel uitdrukt daar creëer je een gezamenlijke vocabulaire mee</i>
<i>Je verliest met deze groepsgrootte wel vrij veel tijd met de foto's printen</i>	<i>Misschien twee telefoons of twee printers of een extra opdrachtje tussendoor</i>	<i>Je bent wel even aan het vaststellen met de achteruitkijkspiegel en de ladder, maar uiteindelijk kom je in het gesprek er ook uit</i>	<i>Het worstelen hoort bij het proces</i>	<i>Volgens mij was ook in het filmpje heel bewust de toekomst niet omschreven</i>	<i>Ik zat te struïtellen, wordt het een utopie of dystopie, maar door kwamen we wel uit</i>
<i>Hopend dat de toekomst zo groen wordt. En dat dit juist op alle logen vroed aangepakt</i>	<i>Als we niet samen met de natuur gaan leven, voorzie ik een sombere toekomst. Dit is dus niet optioneel, maar een must</i>	<i>Kan een positieve richting geven</i>			

# Appendix R: Thematic analysis session 1

## Closed and open coding session 1



Process code    In vivo code    Cross-case analysis

## Closed coding: theme clusters

### How can a democratized futuring exercise guide people from speculation to visioning?

- Experience with the probe
- Metaphors
- Collaboration
- Using a visual to express
- Difficulties
- Visioning



