

# DESIGN FUTURES PHD THINKATON: DIGITALLY BOOSTED WORKSHOP TO TEST AND EVALUATE FUTURE LITERACY METHODS

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## Abstract

The paper presents the organization and the methodology used in the Design Futures Thinkaton: an intensive three days' workshop for PhD candidates moved fully online due to the Covid-19 pandemic. The workshop is meant as a training event introducing design futures literacy methods to PhD students but also as an occasion to test and validate the tools and methodologies developed in the first year of the FUEL4Design Erasmus+ project. In particular the workshop employs and tests the Futures' Design toolkit and the Futures' scouting track with the aim of guiding the PhD student along the generative process of alternative futures. A further support is given by the first two "futures devices" developed in the project: the Futures' Lexicon (a gathering of language support) and the Philosophical Pills (critical lenses to look at the possible, preferable and probable futures).

Keywords: Design Futures, Tools and Methods, Futures literacy.

## 1 INTRODUCTION: FUTURES DESIGN RESEARCH AND CONTEXT

Futures literacy for designers is as an indispensable knowledge in designing complex tomorrows. The success of the design activity depends greatly on the ability of designers to envision possible futures and react accordingly. In this paper, we discuss an educational experience developed by FUEL4Design project (Futures Education and Literacies for Designers), an EU funded ERASMUS + project supported by four partner universities: Oslo school of Architecture and Design (AHO), Politecnico di Milano (PoliMi), University of the Arts London (UAL) and Barcelona School of Design and Engineering (ELISAVA). The aim of the project is to develop a design futures educational methodology supported by proper resources for both students and teachers [6]. The project capitalizes on design futures literacies which refer to the transdisciplinary blend of theories, concepts and methods geared to support situated and resilient pedagogies for anticipatory thinking in the design field.

We are witnessing dramatic changes that make our world increasingly complex: from climate events to defending what we took for granted as democracy, we are challenged as citizens. The future is unclear, yet the future has never been predictable. Designers – able to make projections to produce products, services and interactions beyond the strategies and systems of the here-and-now – are working practically and creatively with the future [18]. Still, the differences and the peculiarities that characterise the relation between Design and Futures Studies are underarticulated [4].

The Fuel4Design community is working on a definition of FUTURES DESIGN as a domain, but most of all as a perspective to shift the focus and practices, conceptually and performatively, of designing for lifeworld that replaces given limited extractive consumption-based economies with ones that are ecologically and sustainably resilient, creatively charged and imaginatively crafted [4]. There is a crucial role for design as "future broker": design and its unique capacity to grasp weak signals, project and embed futures can address the conditions, complexities and cultures of our current local and global settings. In this perspective we see an urgent need for design to develop 21st-century design anticipation pedagogies reframed in what we call "Design Futures Literacy". In the humanities area, attention has been given to futures literacies (e.g., [11], [13], [14] and [15]); but the design community is only starting to explore its anticipatory potentials and often superficially. We see a need to extend design's focus from design thinking to an anticipatory design view [19]. Here anticipation may be defined as 'taking care ahead of time' [12] in addition to creating "new perspectives of how individuals, groups, institutions, systems and cultures use ideas of the future to act in the present." (anticipationconference.org). The project Fuel4Design will provide a topography of futures and a platform for educators and learners to embrace and shape future being aware of the connected responsibilities. The societal challenges call for readiness and resources, practices and critiques to

prepare young design students as future designers, along with educators, to engage productively in meeting known and emerging societal challenges. FUEL4Design extend expertise and preparedness into linked activities to jointly nurture futures and foresight capacities; increase multidisciplinary and European collaboration across faculties and HEIs; establish a training and competence network in the global transdisciplinary field of Anticipation Studies [6]. The experience we are describing - Futures Thinkaton - in particular focuses on the intensive programme for learners – in our case PhD candidates. Politecnico di Milano hosted participants from all the partner institutions; and the workshop was endorsed by the PhD in Design programme at Politecnico di Milano. The workshop was based on new pedagogical approaches to teaching futures that should be critical, analytical, transdisciplinary and with practical, contextual applications provided in an open and participatory manner. Students, through hands-on activities, are guided to navigate opportunities and constraints of possible futures embracing future literacy in a designerly way that enables an active feedback.

## **2 METHODOLOGY**

In this section, we will briefly describe a short account on the futures literacy toolkit we developed as one of the intellectual outputs of the FUEL4Design project. Later we will describe the PhD futures Thinkaton as a research and educational testing of the tools.

To develop the design futures toolkit, we followed a systematic research process that was phased into various stages. The process was an exploration for the current design tools, toolkits and methods' collections from various sources. The aim of this exploratory approach was to position the toolkit within the existing toolkits and to highlight the areas of shortage and gaps in design futures practice. Besides this, identifying the potential tools from other adjacent practices or other close areas that use tools and methods that are relevant to design futures. The first phase of the research was concerned with the creation of a contextual map to identify the current toolkits and methods collections based on their declared domain of usage. The toolkits and methods collections have been collated and gathered in matrices in regard to their declared domain of usage (e.g., Social Design and Design Futures). The exploration was conducted among the established and publicly available design toolkits and methods' collections in both academia and design practice. The conducted study resulted in a vast collection of tools and methods (1062 in total) that are used in the various areas of design. After eliminating duplicated and ill-defined tools, design tools mapped were (251), futures studies (137), design futures (80) and other adjacent domains to design were (128).

The following part focused on segmenting all the tools by coding them according to typology, purpose and relation to design phases regardless the toolkit or method collection they do belong to. Then we highlighted potential tools from adjacent domains that can be used in conducting design futures besides identifying the gap and areas of potential development. The aim of this step was to frame the space of possibility where we can create and develop new tools or methods.

Thanks to this deep mapping, we were able to select 15 tools and methods to test and validate in the Design Futures PhD Thinkaton workshop.

### **2.1 PhD Futures Thinkaton Workshop**

The aim of this intensive workshop was to introduce the partner institutions' PhD Design students to the current development and research in futures literacies; to connect them to research methods and content of futures literacies; and to train them in applying futures literacy methods and content in the PhD research practice.

Due to COVID-19 emergency, the workshop was conducted fully in a digital mode using platforms suitable for teams working remotely which are "Microsoft Teams" and "Miro: An Online Visual Collaboration Platform for Teamwork". The workshop was managed by Politecnico di Milano FUEL4Design research team. The platforms, canvases and tools used during the presentation have been prepared beforehand in order to ensure a smooth process and time saving in the three days' intensive workshop. It's worth noting that the digital mode of the workshop provided many opportunities and opened up new spaces of creativity that enhanced the cooperation and collaboration between the participants during the workshop days. Further explanation of this will be put in the discussion section.

### 2.1.1 Participants

The workshop participants were 17 from each of the four partner institutions: Politecnico di Milano, Oslo School of Architecture and Design, University of the Arts London and Barcelona School of Design and Engineering ELISAVA. The participants were PhD students, and their backgrounds were all in design research. Their research interests are situated in different areas of design including interior design, industrial design, design futures and communication design. Participants were contacted beforehand with the pre-preparation material in order to familiarize themselves with the research project. Some articles from the FUEL4Design “Futures Lexicon” [6] were shared with them as a background material to build upon in the workshop.

The main topic of discussion for the workshop was predetermined and presented in the keynote speech by Prof. Derrick de Kerckhove: “The Digital Twin”. Prof. de Kerckhove triggered the discussion about inquiries on the relation between “The Digital Twin” and Design such as what could be the implications of “the digital twin” in the future context? How do we make this new and complex technology easy to use, secure and useful? And how do we model the behaviour of this twin? The purpose of introducing a topic for discussion, was to trigger the critical discussion about future issues and to inaugurate the debate between the team members.

The participants were grouped into 4 groups, each facilitated by one of the research project members. All groups worked on the same topic, but each decided on a precise focus that was different in each of the four groups.

### 2.1.2 Participant organization and structure

The workshop was organized as a training event. Therefore, some sessions and discussions were introduced in-between the group working sessions in order to develop better understanding about the design futures process and some of the project activities. The aim of these session was to help building some knowledge in these areas and to help participants to relate to the activities of the workshop.

The workshop was planned as an intensive three days activity from 10:00 to 17:00. Each day had its agenda allowing participants to have some time to work together in private sessions as well as having some time slots for discussions with all the participants. Another slots were devoted to guest speakers and extra lectures on particular activities. The first day was dedicated to the keynote speech and the inauguration of the debate. Then the participants worked on the first two phases of the process. The second day was organized to conduct the next three phases (3, 4 and 5) of the design futures process. The third day was devoted to the last three phases (6, 7 and 8) of the design futures process as well as presenting of the workshop outcome by all groups.

The used digital platforms for this workshop were prepared beforehand in order to ensure a smooth and easy process and to make sure the participants can navigate easily through them. Participants were asked to meet and discuss in Microsoft teams while collaborating within Miro Board.

### 2.1.3 Tools and canvases structure

Canvases were designed to allow participants brainstorm freely as well as including a design space which is a blank a space for each team to gather ideas, visual material and rough concepts. Before adding them to the canvas as a final output. Each phase had its own canvases that were used to systematically allow participants to organize their thoughts and to capitalize on the diagramming capabilities of the canvases. These diagramming capabilities are put to foster creativity in brainstorming and to open up a space for discussion. The canvases were made in the form of templates that the participants filled out with brainstorming and discussion results.

We chose the digital platform “Miro” as the main platform for this workshop because it fosters digital collaboration and facilitates the online teamwork. The platform is highly efficient in domains that require gathering visual material. Its facilities that support brainstorming sessions were very useful for this workshop. The Miro board that the groups used was pre-designed. Each group had their own space for each day where they can work within its borders. We also dedicated a space for reflection and feedback. Another space was designed for extra resources and material; where facilitators share documents, papers and presentations to help the team in their brainstorming and to boost their knowledge with extra material. These spaces were shared with all the participants (Fig. 1).

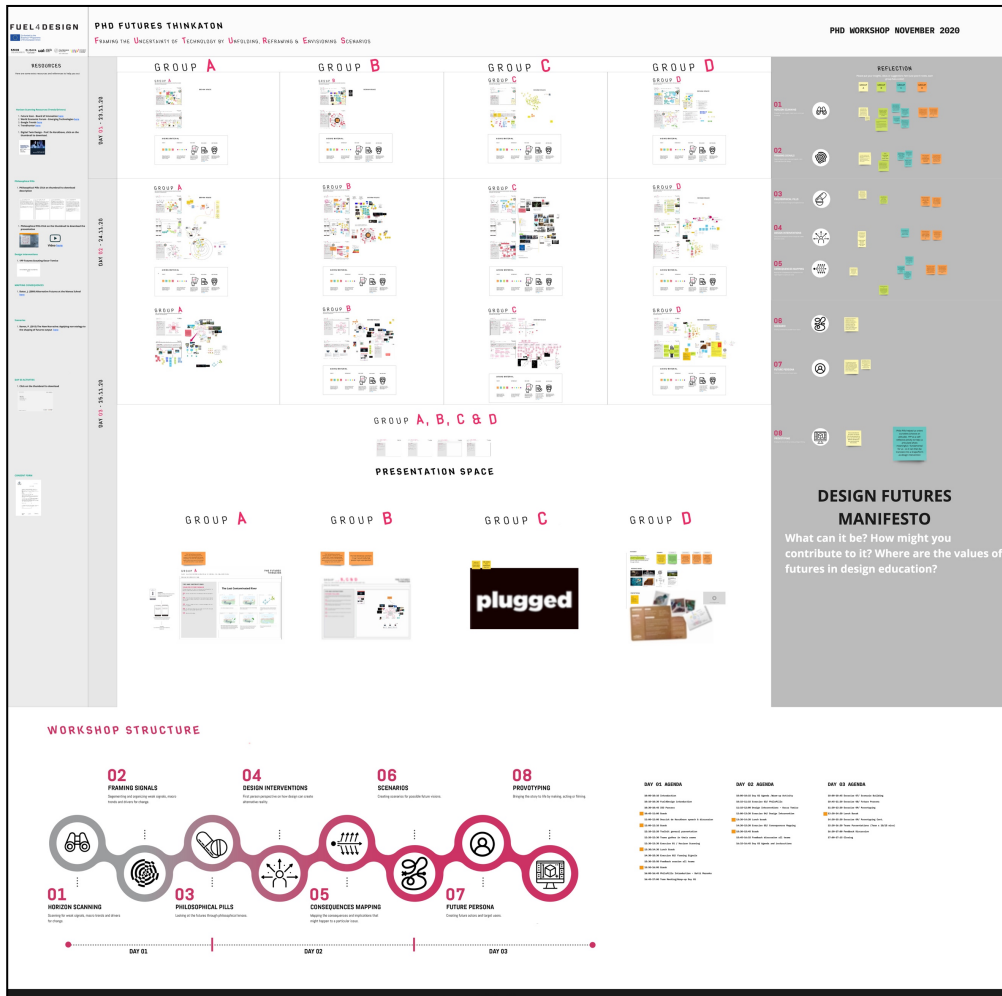


Figure 1. The Miro board design

### 2.1.4 Process

The workshop was phased into 8 phases; each corresponded with a phase of the design futures process identified through the research project intellectual outputs (Fig. 2).

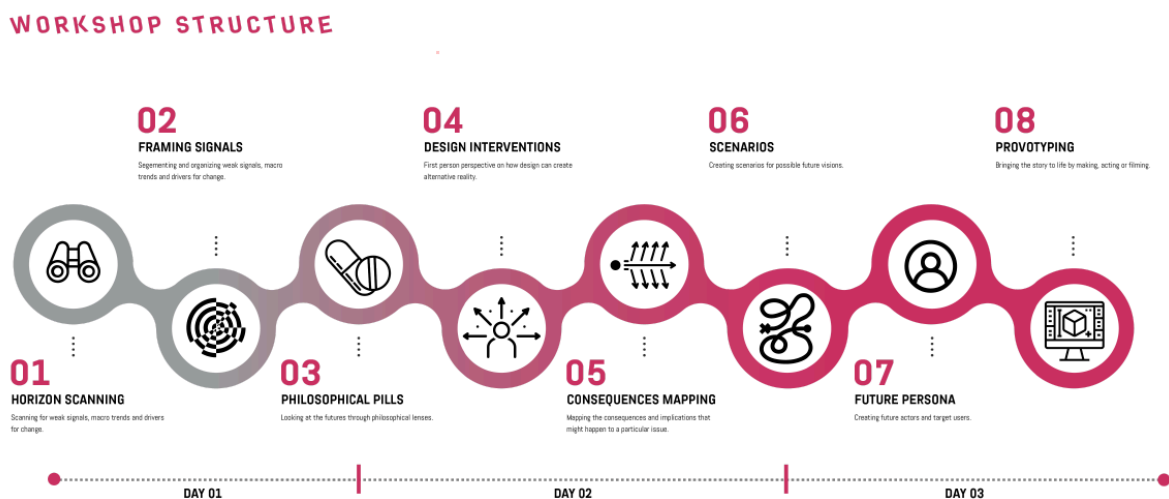


Figure 2. Workshop structure

All groups were instructed to go through the same process. However, even if only in some phases (2-5-6-7), we've have selected different tools to be used by each group in order to make reflection upon the

performance of each tool or method used. The aim of doing so was to test the effectiveness of the different tools that have been distributed to the teams in order to support the same phase and with the same goal but with different approach and complexities. The final purpose was to observe, evaluate and reflect upon how the teams will respond to the same goal using different tools or methods. In other phases (1,3,4 and 8) the tools and methods proposed were common for all groups. These tools were new tools to be introduced by the project that needed wider testing to support their development. The phases description is as follows:

### Phase 01 Horizon Scanning

The first phase of the workshop process was the Horizon scanning or blue-sky research. Participants were asked to discuss the topic in detail and to research about the issues and challenges discussed in the keynote speech. The aim of this phase was to give a chance for the team to dig deeper in the research topic and to formulate a common understanding about the focus points they would like to develop in the project. At the end of this phase the teams gathered weak signals and macro-trends around the area of focus they selected (Fig. 3).

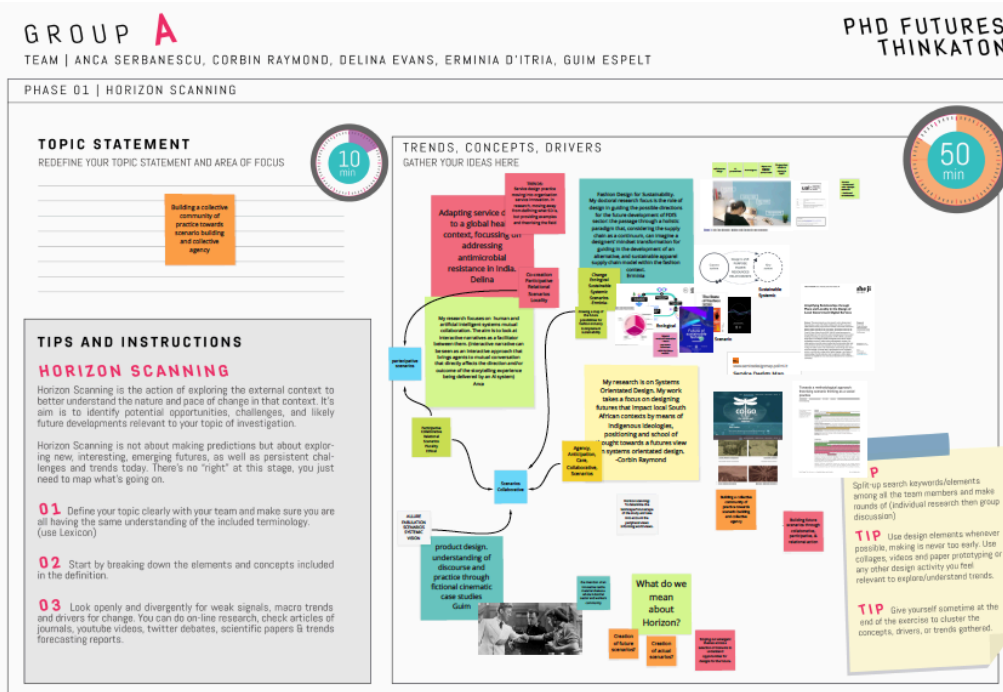


Figure 3. Horizon Scanning canvas

### Phase 02 Framing Signals

Following the Horizon Scanning there is the need of Framing Signals; at which each group has systematically identified and reorganized the insights and macro-trends they gathered in order to tackle the focus issue of the project. The aim of this phase was to interpret and segment the gathered concepts and ideas and to eliminate the irrelevant ones. Tools used in this were the PESTLE Analysis [17], CIPHER Analysis [7], VERGE [16] and Futures Forces [7].

### Phase 03 Philosophical Pills

The third phase was devoted to the application of the Futures' Philosophical Pills as a filter. This particular phase is one of the project original outcomes in design futures education. The philosophical pills are "a curated set of philosophical insights, concepts, ideas to use to think about futures. They offer packaged critical lenses that interrogate, challenge and unsettle established assumptions around futures" [6]. The aim of the Futures philosophical pills is to interrupt existing or in-the-making design projects leading the process into a discursive practice as well as critiquing ideas around the futures. In this stage, each group reflected their findings against pre-selected philosophical concepts that are meant

to disrupt future discussion upon their focal issue. This was made on purpose to trigger new dimensions and to challenge the teams for further exploration in the futures plurality and challenges that might affect their focal issue. Participants were asked to reorganise their findings after reflecting upon the selected philosophical pills: Post-Anthropocene, Animism, Decolonisation, Border Politics/Displacement (Fig. 4). This phase was introduced and presented by Dr. Betti Marenko the principal investigator of the Philosophical Pills and one of the guest speakers in this workshop.

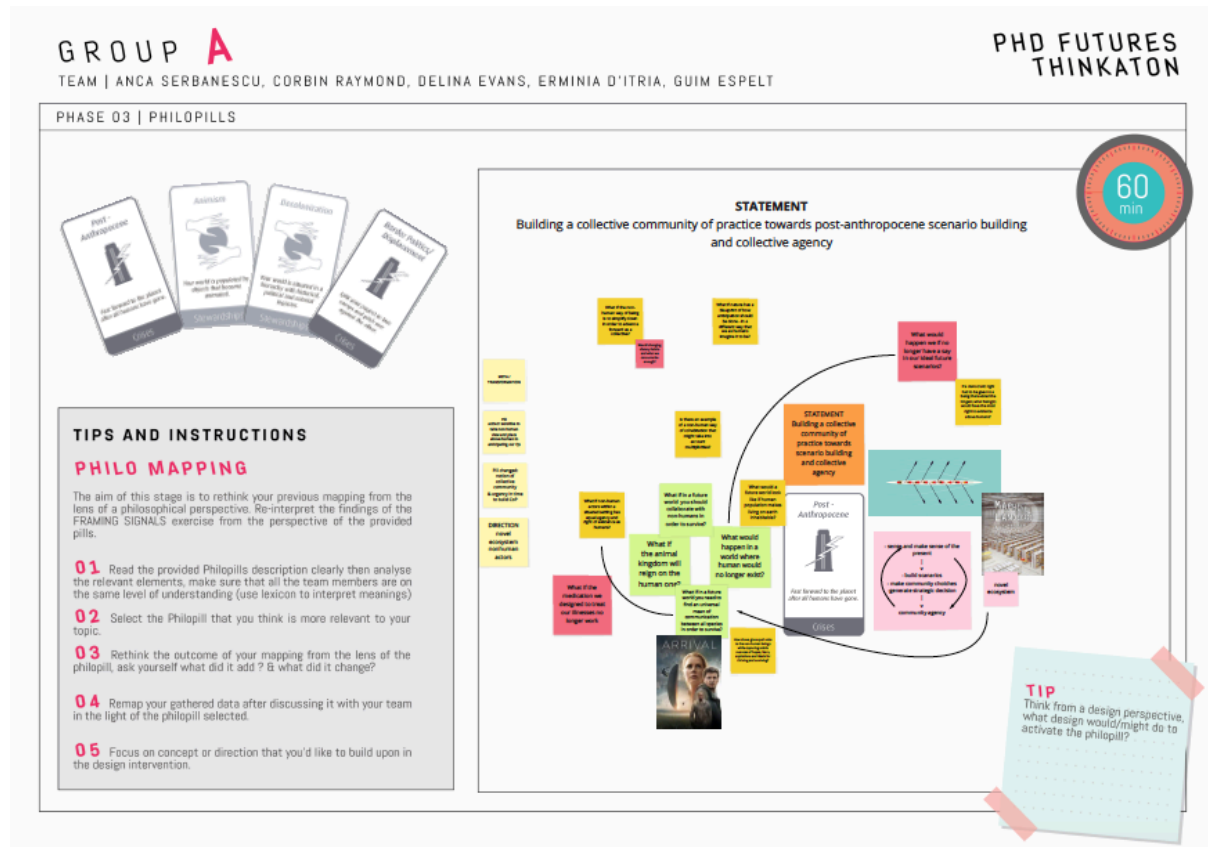


Figure 4. Philosophical Pills mapping template

#### Phase 04 Design interventions

Following the Philosophical pills, participants were asked to go through the fourth phase of Design Interventions. This phase capitalises on the design practice. It does acknowledge design action as the main driver and tool which engages in materialising futures. The purpose of this phase was to encourage participants to design futures through first-person perspective by creating alternative reality as a method to engage oneself in futures' discussions. The teams were encouraged to think of futures from their first-person perspective, each participant was asked to think of their focal issue and to engage with it with a hands-on design action. At the end of this stage, participants tackled their focal issue by creating an alternative reality proposal. Each one of the team reflected upon the proposals of others then participants discussed all the concepts and reflections deeply within each group. This phase was presented and explained by Dr. Oscar Tomico who was one of the guest lecturers to this workshop.

#### Phase 05 Mapping Consequences

At this stage, participants were asked to decide on the focal issue they have identified from the design intervention phase. The aim of this stage was to project on it and discuss what could be the implications that the focal issue might cause or affect in the future. The results of this phase were several scenarios tackling different issues. Consequences Mapping exercises helped the participants to create different scenarios (Fig. 5). The tools used are: Futures Wheel [8], Four Archetypes [5], Polarity Mapping [17], Branching [1]

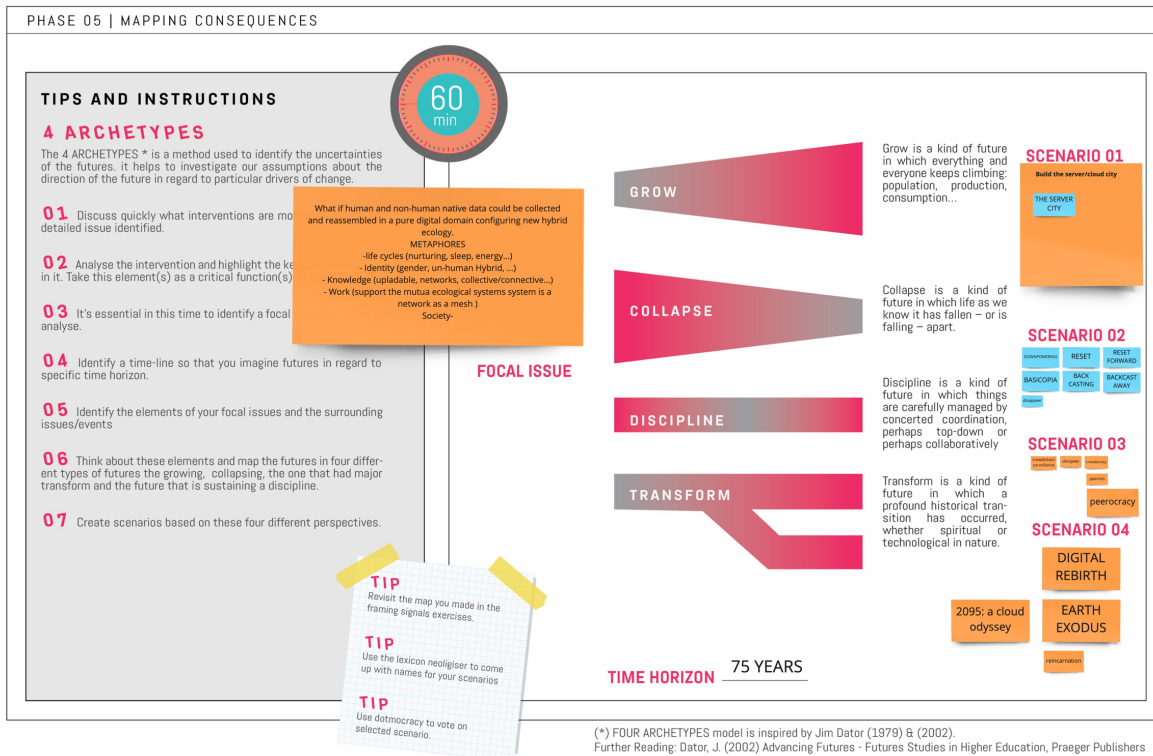


Figure 5. 4 Archetypes canvas – Consequences Mapping

### Phase 06 Scenarios

At this stage, participants were asked to put the insights gathered from the previous stages into one scenario. The scenarios were formulated based upon criteria that were created due the course of the project research. The criteria were: Immediacy, Provocation, Sensoriality, Consistency, Coherence. Participants were asked to follow these criteria in developing their scenario.

### Phase 07 Future Persona

After creating the scenarios, participants were asked to create a futures' persona that should be situated within their scenario of the future. The participants used different types of methods and canvases to create the persona, the methods were: A Day in a Life [10], Futures Persona [3], Story World [9] and Palmistry

### Phase 08 Provo-typing

The last stage of the workshop was the Provo-typing [2]. Provo-typing is a word that mixes between the word prototype and the word provoke. In other words, it means a provocative prototype. This stage was the creation of discursive and provocative prototype which has the aim of creating a discursive space around the focal issue the team was tackling. The aim of this prototype was to open up the discussion about the future through designing an artifact, story or a video. All groups were asked to select one type of provo-typing methods that suits their projects, the types suggested were story board, provo-typing, design fiction and future-telling.

## 3 RESULTS & DISCUSSION

### 3.1.1 Workshop outcomes and criticalities

Each group of the four groups presented a concept at the end of the presentation. Two groups presented storyboards and digitally developed prototypes for their concepts and one group presented a rough

physical prototype besides creating a design fiction video. The fourth group has created a digital prototype and supported it by a role play over a video presentation.

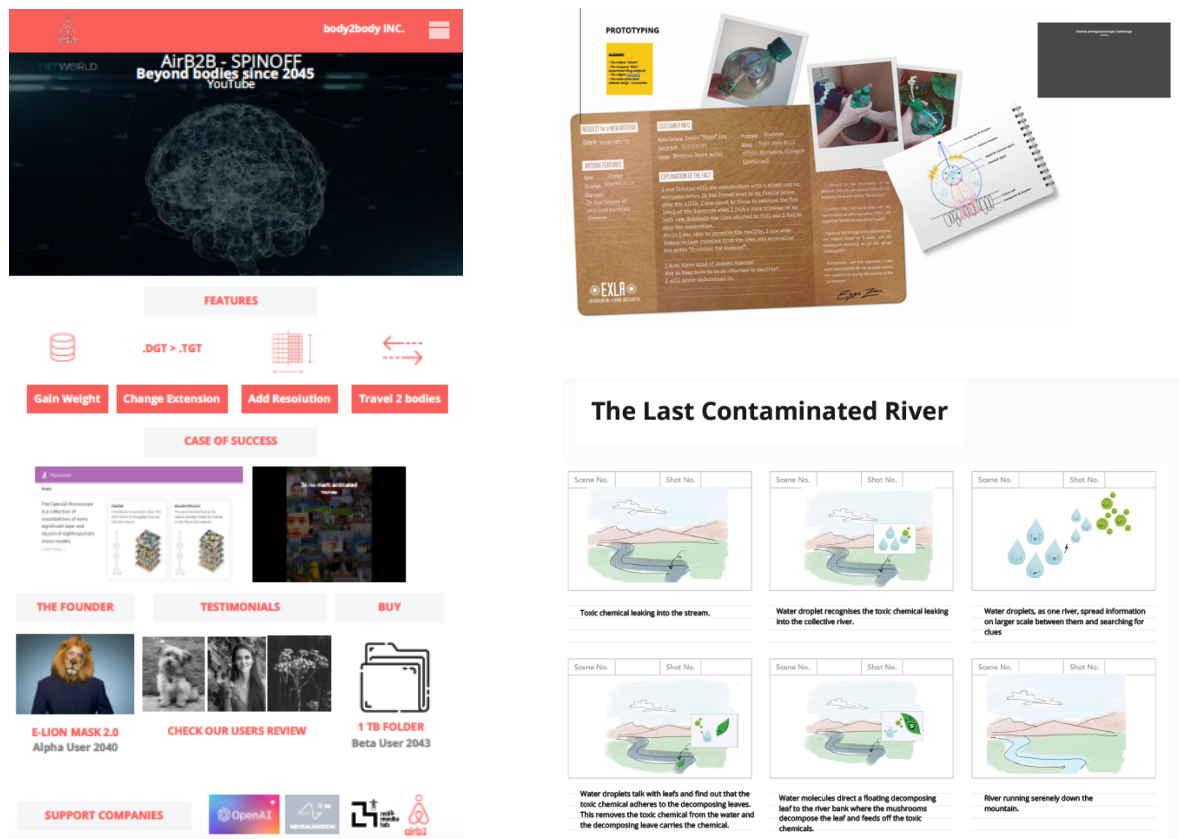


Figure 6. Final Presentations of Prototypes

The tools in this workshop were presented to participants with the aim to train them on futures literacy methods and how to trigger critical discussion in futures design. Participants were engaged to try out the different tools and methods presented. They were excited to discuss their findings within their group's private sessions. Participants were also engaged in the debates initiated in the general sessions by the guest speakers. The topic presented was a quite challenging project, allowing participants to delve into new realms of discussions about the future of humanity and its relationship with technology. It succeeded in inaugurating discussions about the critical perspectives and inquiries in design futures. The tools presented were meant to work as a catalyst in this process of discourse around future issues, they played the role of triggering actions, activating debates, and disturbing discussions around the focal issues. Tools -for instance the philosophical pills- added new dimensions to the debate which, in turn, widened the participants' understanding of topical issues in design futures such as Animism and Post-Anthropocene. The fact that these tools were designed to disrupt the process with either early action or an action that encourages critical view of the future has nurtured how the groups are looking at their focal issue from plural and deep perspectives.

Some tools needed higher intellectual interpretation than others, for example the VERGE analysis versus the PESTLE analysis. Some participants had difficulties in responding to the difficult concepts in the VERGE analysis in a compact workshop; while the straightforward terminology in the PESTLE analysis led to a smoother brainstorming session which might indicate that we need to highlight the differences in the required time for conducting particular tools. In general, participants response to tools with direct or understandable call of action was higher than tools that need extra understanding and knowledge beforehand (for example: design interventions and design fiction). Participants tended to use the tools they better relate to and understand.

In regard to workshop structure and organization, participants were quite satisfied by the fact that the workshop was structured beforehand, saving time to organize their thoughts and brainstorming sessions was beneficial for the smoothness of the process.



### 3.1.2 *The digital realm*

Conducting the workshop digitally boosted the workshop outcome on many levels. On one hand, the digital brainstorming sessions were very efficient in the research phases as they supported participants to look for material easily and to enhance their horizon scanning research. Participants were able to collaborate digitally in their allocated virtual spaces and to use the digital canvases easily without any spatial restrictions. They could navigate easily between their tasks; looked back smoothly on previous stages and jumped to next steps in order to relate to their current activities and decisions. Having all the material and resources on one place has also enhanced the time management and reduced the risk of wasting time on technical issues such as shifting between platforms. Another positive point is that it helped participants being in equal position; all having the same devices and tools at hand. This equality was very encouraging factor that enhanced the creative brainstorming sessions. Although having many positive points, it also had some drawbacks on the final part of the project where participants could have accessed to material and prototyping facilities that might have enhanced the workshop design outcome.

The guest lecturer talks have played a big role around expanding the understanding of particular tools and methods as well as opening up new debates within the teams. They furthered the knowledge of the participants about futures design in general and futures literacy in particular. On the other hand, in some of the phases, the participants felt that they could have had explicit and detailed instructions on how to apply particular tool and to be able to conduct it efficiently.

### 3.1.3 *Future plan*

Our future plan within this project is to turn these tools into educational material to be added to design educational curricula. The impact of this toolkit should allow learners and researchers to achieve a transformative approach towards critical and discursive futures rather than classical practices currently available. The toolkit should be a practical gear for design educators that may be implemented in the curricula and pedagogies in order to meet challenges of teaching design for the future. It does relate to the wider impacts and relations of key education in policy and strategy as well as the UN sustainability goals and related social innovation programmes.

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