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DESIGNING IN TROUBLING TIMES: EXPERIMENTAL ENGAGEMENTS WITH SOCIO-ECOLOGICAL CHALLENGES AT THE UROBOROS FESTIVAL

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Introduction

Early in May of 2020, the era of the burgeoning COVID-19 pandemic, we organized a four-day online design research festival called Uroboros,[1] exploring what and how we could design in the current times of global social crises to support positive change. The festival was grounded in experimental design co-creation, inviting design researchers and practitioners of diverse social, cultural and professional backgrounds to contribute their projects responding to the festival theme *Designing in Troubling Times.* While the ongoing pandemic radically impacted the festival's format and program, the theme was proposed to cover a wide range of social and ecological challenges: from climate emergency and ecological injustice to rising wealth disparities and structural inequalities. Informed by the UN Sustainable Development Goals[2], the theme outlined these challenges as being deeply intertwined, and brought to the foreground the urgent need for new approaches and initiatives that could stabilize socio-ecological systems and support sustainable transformations. Emerging research in the area (e.g., CreaTures 2020; Dolejšová and Wilde et al. 2020, Light et al. 2019, Wilde 2020) highlights that creative art and design practices have important transformative potential. The Uroboros 2020 festival provided a shared space to explore such potential through a four-day program of experimental design events that co-creatively engaged the festival audience.

Our aim with Uroboros was to offer a stimulating experimental design space accessible to all as an alternative to (often closed) professional design festivals and academic conferences.[3] The festival was cost-free and open to the general public: people could either sign up to actively participate at individual events, or watch a live stream on the Uroboros Youtube channel[4]. The theme and the concept of the inaugural Uroboros 2020 festival were proposed by the Czechoslovak design research collective ALTTAB[5] in autumn 2019, with the vision of organizing a local event in the physical premises of the DOX Center for Contemporary Art in Prague[6]. At the time, we had no idea that the COVID-19 pandemic was waiting around the corner and that by mid-2020 the proposed theme would be more urgent than expected. The uncertain development of the virus and the social distancing measures that started emerging just a few months ahead of the festival also meant that we had to quickly devise a festival 'plan B'. Instead of cancelling or postponing, we decided to take the risk and adapt the festival program into a new online format. Despite the many practical

challenges that this change brought with it, the online environment enabled access to much larger audiences than originally expected. At the end, the festival was attended by more than 600 designers, artists, researchers and practitioners from around the world, with over 3500 views of festival events live-streamed on YouTube.

In this article, we focus on three selected online festival events and discuss the diverse experimental approaches that they employed to address the theme Designing in Troubling Times. Writing from the perspective of festival curators and full participants, we share our first-hand observations from each event and discuss what knowledge they helped to reveal. Drawing on these insights, we propose that these three events provide viable examples of how experimental design co-creation can support diverse critical engagements with sustainability issues and nurture imaginative proposals for desirable futures. Co-creative experimentation in design research and practice is not new and it is not our intention to claim such novelty here. Instead, we hope to demonstrate the – often undervalued – potential of these creative experimental approaches for supporting critical reflections on urgent social and environmental challenges. In the following sections, we introduce the festival theme, unpack the three events and discuss how the collective processes of hands-on (yet also remote) design experimentation shaped the participants' thinking and debates about the socio-ecological issues at hand.

Designing in Troubling Times

Global crises such as anthropogenic climate change, poverty, food scarcity and the Covid-19 pandemic have led to gradual social and ecological degradation. As the prospects for the near future darken, it becomes painfully felt that we have failed to maintain healthy and just conditions for life on the planet to thrive. Design is often seen as intrinsically a part or even a cause of societal challenges, intensifying inequalities and accumulating power in the hands of the privileged few. Entangled in the socio-economic processes of production and consumption, mainstream design in the form of unsustainable techno-fixes created for immediate profit rather than long-term impact emerged as a source of problems rather than solutions for better futures (Buchanan 1992; Cross 2011; Papanek 1985). Acknowledging that we have *designed ourselves into* many of the world's current problems, the festival theme Designing in Troubling Times highlights the need for design to urgently reorient towards the values of social justice and environmental sustainability.

Creating conditions for design to become a tool of positive social change requires that we shift our understanding of what design is and does. Design researchers and educators such as Arturo Escobar (2018), Tony Fry (2009), Ann Light (2019), Ezio Manzini (2009), and Danielle Wilde (2020) have been stressing the need for design to reshape its position in society in order to become responsible, responsive

and transformative in its effects. Called the 'social turn', this sees design as a post-disciplinary practice capable of empowering individuals as well as communities and enabling broad access. The democratization of design processes and outcomes is considered to include the interests of diverse stakeholders, human and non-human alike (Puig De La Bellacasa, 2017), and reach beyond the threshold of professional design sectors. This radical inclusivity and openness towards diverse more-than-human concerns is critical, as all of us living on this planet share responsibilities and are implicated in futures to come. The social turn in design proposes a shift away from designing quick-fix solutions to *engineer our troubles away,* and towards efforts to use design to assist in the development of long-term conditions for social change. Design is embraced as a world-making process supporting critical engagement with social challenges that is capable of mobilizing diverse stakeholders to propose visions for sustainable and just futures. Such inclusive and socio-aware design approaches have been theorized about and implemented in various forms and contexts for decades. Still, in 2020, we are in need of finding ways to bring design's creative transformational potential into full bloom and ensure long-term, equally distributed impact. This need is felt strongly in (some parts of) the design research community, as is evident from the growing number of initiatives aiming to nurture design's transformative capacities.[7]

Inspired by these initiatives and existing work in the field, the Uroboros festival aims to assist such efforts by providing an open and widely accessible space for sustainability-oriented experimental design co-creation. To frame the festival theme, we borrowed the symbol of the Uroboros – the ancient serpent devouring its own tail that changes its form in an eternal cycle of re-creation, using its own body as a fuel. The self-consuming Uroboros, whose wellness depends on how the snake is nourished from within, serves as a metaphor capturing the need to reshape design's social position: to make design flourish and to make it socially impactful, we, design researchers and self-reflective practitioners, need to feed it better. At the same time, while following this metaphor, our aim is to gently disturb the somewhat monolithic looping of the designerly serpent and allow more actors from beyond the design circle to enter, and bring in their perspectives and expertise. Starting from this provocation, the Uroboros festival called for experimental projects that critically and experimentally engage with the question: *what can we design in these troubling times to support a positive change?* The four-day online festival program involved thirty-two events, including workshops, performances, LARPs (Live Action Role Playing), panel discussions, lightning talks, live coding parties, and other co-creative experiments initiated by forty-five authors from across the world. The size of the festival events ranged from a four-person LARP to a panel discussion on the future of design education attended by more than ninety people. Events were typically two hours long. The main festival platform was the video conferencing system Zoom[8], although authors were given the option to use alternative tools of their choice.

We now discuss three selected festival events: Danielle Wilde's distributed salon *Honey, Shit, Soil, '*dərt ~ *Eating Our Way To (Better) Futures*, Juli Sikorska's workshop *Urban Heat Island Living – Designing Sustainable Urban Futures*, and the *Every-*

thing Dies (Though It's Never Been Alive) workshop by Stefan Schäfer. We chose these particular events because they illustrate diverse experimental design approaches and techniques, as well as diverse thematic and conceptual angles to address contemporary socio-ecological issues.

Three Examples of Designing in Troubling Times

Danielle Wilde: Honey, Shit, Soil, 'dərt ~ Eating Our Way To (Better) Futures

The distributed salon *Honey, Shit, Soil, '*dərt *~ Eating Our Way To (Better) Futures*[9] was led by Danielle Wilde, an Associate Professor of Embodied Design at the University of Southern Denmark and used experimental food design as a starting point for critical thinking about sustainable ecosystems. The salon was carried out as a guided exploration of the full cycle of food processes happening on the scale of our bodies – from eating to defecating – and their impacts on the ecosystems we inhabit. Co-creative activities revolved around four primal elements: honey, shit[10], soil, and 'dərt (a phonetic spelling of dirt) that we used as material and conceptual resources. Prior to the event, we were instructed to prepare foodstuffs and items related – literally, metaphorically, or materially – to one or more of the primal elements. Working in small groups, we shared stories about the origin of our items, engaged in remote tasting, and crafted models of our personal poops, the end products of the human-food cycle. Throughout, we explored the intricate entanglements of human and non-human food processes in food systems, discussed issues with socio-ecological sustainability, and imagined desirable futures.

Theme and Focus

In the salon, food served as a design material as well as a context for research. Danielle outlined food as a critical concern, highlighting that human-food practices are a key driver of climate change. Indeed, the way we eat, provision and dispose of food at present is pressuring Earth's systems toward tipping points, making both people and the planetary system on which we rely for our survival sick (Willet et al. 2019). Aside from being a critical concern, food was also foregrounded as a socio-culturally potent and sensory-rich material for design research experiments. Food and food practices are relatable everyday life events that occur at the scale of the body – the scale at which people operate, think and can easily imagine (cf. Wilde 2020).Through all these qualities, food provides an accessible design material and a locus for critical thinking. The salon embraced these food qualities and leveraged experimental food design methods (e.g., Dolejšová and Wilde et al., 2020; Wilde 2020) to provoke co-creative reflection on current socio-ecological issues that was open to anyone, with no requirements in terms of skills or expertise.

Activities

The salon was centered around Danielle's performative lecture intertwined with two co-creative sessions in small groups and a closing discussion. The three-part lecture was broadcast from Danielle's home kitchen and provided essential information for the co-creative activities, illustrated by various practical – tangible and hands-on – examples.

1. Honey

The first part of the lecture focused on honey, a food product resulting from unique more-than-human food processes that require a careful, long-term collaboration between bees and beekeepers. Honey has complex organoleptic qualities and benefits for human health, including positive effects on the human gut microbiome. Highlighting that our personal health is closely intertwined with the health of our ecosystems, Danielle outlined her first provocation: *What can we learn from the more-than-human stewardship that is central to beekeeping to become better stewards to our microbiomes?* Informed, we proceeded with the first group session; sharing the honey samples we brought, engaging in remote tasting, and discussing their flavors as well as long-term effects on our digestion (see Figure 1). We also shared the stories of our honeys' origin and the personal meanings they carried. All those shared stories and samples helped us to connect various personal as well as wider ecological qualities of honey, and also to get to know each other, which was crucial for the next group activity.

1 Sharing honey and stories: getting together and diving into the topic.

2. Shit

The second part moved us a leap forward in the human-food cycle, from honey to shit – an end product of digestive processes. We took a closer look at the human microbiome and the hidden world in our guts. Danielle proposed that our microbial gut flora is a kind of black box: the colonies of tiny non-human microbes living in our guts are not accessible to a layperson's eye but also not entirely mapped by expert scientists. Gut processes and their end product are also caught up in rich cultural arrangements saturated with social norms and taboos. Our excretions provide a good indicator of what is happening in our guts, but talking about them is not a common part of social conversations. This is curious, as the health of our gut impacts both our physical and emotional wellbeing (Wang et al. 2017), which has a profound effect on how we live our everyday lives and – potentially – impacts the world around us. In our second breakout session, we developed on our previous discussion and engaged with the question: *how can we take care of our microbiomes to support the balance of our – both internal and external – ecosystems?*

We started by focusing on our personal gut processes. To make the conversation more accessible, we were asked to craft models of our personal poops using any suitable materials we could find in our pantries (see Figure 2). While handmaking our poopmodels using ingredients like tea bags, chocolate, coffee and our honeys, we talked about our daily diets and digestive experiences: what do we eat and why, how does it affect our digestion and wellbeing, and how is it represented by our poop models? These conversations were personal and intimate, as well as

2 Experimental crafting of personal poops stimulated a lively discussion about human and planetary health.

informative and reflective of our diverse lifestyles and larger cultural contexts. We discussed various types of toilets across countries and how diverse cultural and social norms influence people's feces inspection practices. Who can (not) talk about their poops and personal gut health and why? The co-creative process of crafting our poop models aided our ability to discuss these delicate health practices and draw connections to broader social contexts.

3. Soil

The final soil lecture closed the cycle of personal and systemic food processes explored in the salon, showing their close interdependence. Soil is the core base of all grown food that we eat and serves as a bed for carbon dioxide absorption and sequestration. However, the ongoing degradation of soil quality through human-driven processes such as industrial farming has led to an increased release of carbon into the atmosphere, directly contributing to global warming and climate change. Human food production and consumption are key economic drivers of these harmful processes that negatively impact soil and climate, as well as people's health (Willet et al. 2019). Human-food practices are thus central to both people's and the planet's wellbeing. In a closing discussion, we highlighted that to keep the soil quality on a sustainable level, these practices need to change. The complex entanglements of personal and systemic food processes are often hidden from the end-consumers' eye: they are not part of primary education, and are deliberately neglected in the food industry's marketing communications. To make the processes more visible, we discussed that schools should provide space for hands-on food learning and practices such as composting, gardening, cooking and fermenting. Same as for us in the salon, these hands-on engagements with food materials can help people realize the food system interdependencies and acknowledge that food practices need to be performed with more-than-human care (cf., Beacham 2018; Dolejšová and Wilde et al. 2020).

Juli Sikorska: Urban Heat Island Living – Designing Sustainable Urban Futures

The workshop *Urban Heat Island Living – Designing Sustainable Urban Futures*[11] by futures-oriented designer Juli Sikorska addressed the burning issue of urban heat waves, one of the climate change consequences already felt by humans and non-humans across the world. The workshop invited participants to explore the phenomenon of urban heat islands (UHI) – areas that are significantly warmer than their surroundings due to human activities – and design posters from the future proposing various ideas for sustainable and cooler cities. UHI was introduced as a wicked problem that exists as a complicated cluster of socio-ecological and economic causes and effects. To make the problem accessible to non-experts, the workshop focused on participants' personal experiences with heatwaves in their home cities. This focus supported a diversity of perspectives, as we came from all over Europe, including

Split, Seville, Berlin, Rotterdam and Prague. The workshop itself took place in the online collaborative environment Miro,[12] which had been pre-populated with UHI materials and instructions for the poster design task. Our future thinking and imagination were provoked by Juli's kick-off speculation: *'First signs of urban heat islands were observed as early as 1810, but it was not until the great heatwave of 2024 that people started creating their own ways of dealing with them'*.

Theme and Focus

In her introductory lecture, Juli outlined key UHI challenges and framed urban heat waves as a climate change problem caused by various human-led factors, such as mass deforestation and waste heat generated by energy usage. UHI has multiple side effects that are harmful to individuals as well as local, and potentially also global, ecosystems. While scientific warnings of climate change effects are often set in the far future, many humans and non-humans are already affected now. Acknowledging that rising temperatures will likely have consequences for all of us living on this planet, we approached UHI as an urgent issue that requires radical changes in socio-economic processes as well as individual lifestyles.

Activities

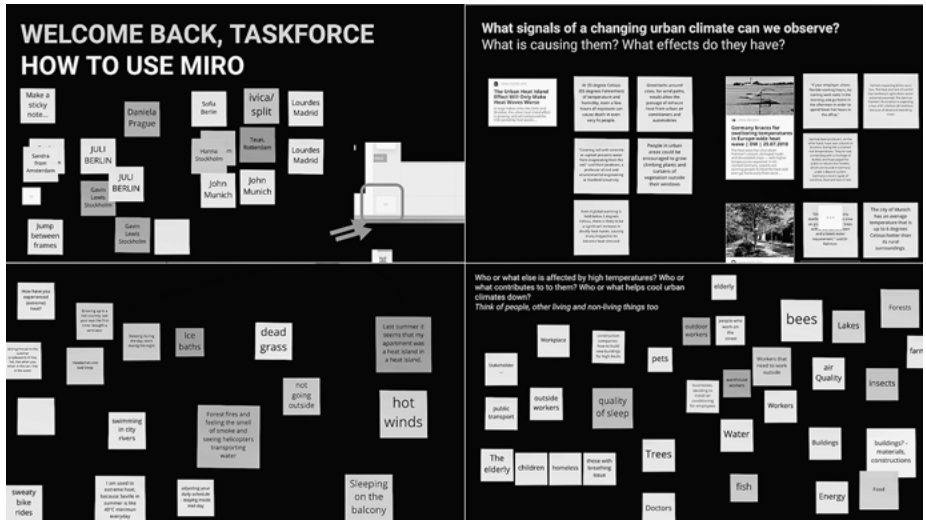
The workshop activities consisted of several scripted steps, including a collective mapping of UHI stakeholders, research into the signals of changing urban climates, and a speculation on desirable future changes in the form of call-to-action posters.

1. Stakeholder Mapping

To grasp the wide scope of UHI effects, we first shared examples of our first-hand experiences with urban heatwaves and filled our Miro board with personal post-its saying things like: 'not going outside', 'dead grass', 'headaches and bad sleep' (see Figure 3). Informed, we continued with mapping of stakeholders most affected by rising temperatures, including human groups such as homeless, construction workers and elderly, but also various non-human species and entities from house pets and bees to trees and lakes. The shared Miro helped us to collect our individual examples in one place and quickly create a basic UHI stakeholder map, which provided a starting point for a more in-depth exploration of UHI signals.

2. Researching UHI Signals and Social Contexts

Looking into existing signals of changing urban climates and their social linkages, we came across a variety of examples, including the link between people's exposure to heatwaves and their wealth (see Figure 3). Green city areas, which tend to be cooler, are often located in rich neighbourhoods with higher housing costs. This 'green gentrification' (Anguelovski et al. 2019) makes low-income groups more exposed to heatwaves and their side effects. Ironically, these most exposed populations often contribute the least to climate change but they have the fewest resources to adapt or



3 How do we experience heatwaves? Who is most affected and why?

protect themselves. This research task helped us to shift our critical thinking about UHI from personal to more complex social dimensions, which we elaborated in the next step, which focused specifically on positive UHI signals. Looking at examples of 'good' UHI mitigation measurements, such as building green rooftops, we brainstormed strategies for supporting cooler future cities. To make our strategies visually engaging, we designed DIY call-to-action posters.

3. Designing Future Posters

Working individually, each of us chose one positive UHI signal and unpacked the social changes that it would possibly reveal should it get implemented. To speculate on possible implications of the envisioned changes and define plausible target groups, we analyzed our signals using the futures wheel (Glenn 1972). Outcomes of this scripted step-by-step futuring process were materialized in our posters, which eventually introduced a wide variety of creative and often also practical UHI mitigation proposals. One poster introduced the idea of 'Universal Basic Green', a universal basic income in the form of unrestricted access to city green space. With the slogan 'Everybody Deserves to be Cool', the poster called for climate justice and the need to fight green gentrification. Another poster with the slogan 'Paint the city!' took a more playful direction, encouraging citizens to paint city streets and buildings with heat resistant colors (see Figure 4). These examples show that the futures workshop helped diverse participants, including non-experts and novices to the UHI theme, to develop critical perspectives on UHI issues and share them in a creative and accessible manner, in a short period of time.

4 Call-to-action UHI posters: imaginative ideas for sustainable future cities.

Stefan Schäfer: Everything Dies (Though It's Never Been Alive)

The workshop *Everything Dies (Though It's Never Been Alive)*[13] by Amsterdam-based design researcher Stefan Schäfer explored various representations of death in a more-than-human world, inviting participants to co-design prototypes of memorials for the 'deaths of the non-living'. Memorials, as vehicles of commemoration and mourning, are made almost exclusively for humans and their closest non-human companions, such as pets (at least in Western cultures). Highlighting that there are many other non-human but also inanimate entities on this planet that are dying and deserve to be acknowledged – from melting icebergs and burning rainforests to vanishing cultural traditions – Stefan proposed to disrupt the human-centric tradition of memorials. Participants were invited to suggest which nonliving entities deserved to be commemorated and to collectively design memorials. Considering that the deaths of the non-living and the non-human are often caused by a human hand, such human-made memorials are a much-needed tool for self-reflection in the twenty-first century.

Theme and Focus

The workshop drew on Stefan's long-term research project Let Death Dance Again[14] focusing on the medieval allegorical concept of the Dance of Death (DoD)

that embraced esthetic and poetic values to defend society against human egoism (Rosenfeld 1974). DoD aimed to make people conscious of their interconnectedness with the environment and other living or non-living entities (or their 'Kreatürlichkeit'). The workshop proposed that a shift of modern Western conceptions of death towards the DoD-inspired 'human un-centeredness' could provide a lens for research into more-than-human interdependencies in ecosystems. This idea is certainly not far-fetched: the ongoing climate crisis has caused many people to mourn the dying of nature and the degradation of biodiversity. This 'ecological grief' (Ashlee and Neville 2018) has been already expressed in concrete actions – an example is a memorial ceremony that was held for the dead Icelandic glacier Okjökull in 2019. These eco-grieving actions often reach beyond mere commemoration and serve as appeals to society to prevent further environmental degradation by radically altering social norms and behaviors. Starting from a question: *How should we approach the mortality and gradual decay of nonliving entities in the context of environmental ruination and social crisis?* we plunged into the workshop activities.

Activities

Inspired by Stefan's storytelling lecture about his Let Death Dance Again project and some of its outcomes, such as a memorial T-shirt created for the Okjökull glacier (see Figure 5), we shared our personal interests in the area and proposed non-living entities for which we would like to design a memorial.

5 The Okjökul t-shirt is a wearable memorial that enables the wearer to visibly show grief and share it with others.

1. Collecting Ideas

We shared diverse concerns related to the death of non-living entities, including a dying volcano in Mexico, gentrified city areas and dead buildings, drying rivers in Central Europe, the death of the 'old normal', referring to the pre-pandemic society, as well as the vanishing sense of the taste of natural-grown foods. After a long and rather detailed discussion, we clustered our collected concerns into three main categories – dying natural ecosystems, urban landscapes and 'old normal' social values – and split into three working groups.

2. Prototyping Memorial Designs

The ecosystems group focused on changing weather patterns, using the lens of weather proverbs – short sayings representing ancestral knowledge that exists globally but carry different meanings across countries and cultures. An example is a Mexican proverb 'Cold April, wet May, there'll be plenty of corn', which uses weather patterns to predict a future harvest. To us in the group, the proverb served as a representation of a traditional knowledge that is dying along with the changing climates and unstable weather patterns.

After deciding on the main focus of our prototyping, we negotiated what tools we should use to design our memorial. Considering the varying levels of design expertise in the group, we chose the simple Google Draw tool that enables easy remote sharing of images. We started with a Draw collage of a weather totem that included diverse symbols typically representing weather patterns, such as an umbrella, a kite, or a hundred-year-old Croatian weather calendar (see Figure 6). For our final

6 The sky dancer is a non-living memorial made for a dying non-living entity (weather) that is powered by air artificially pumped into its body. The dancer comes to life,performing a modern version of the Dance of Death.

prototype, we decided to embody the digital totem in a material form, as a huge inflatable sky dancer – the 'dancing' figure commonly used at fairs that resembles traditional totems. The sky dancer carries pictograms representing weather proverbs and serves as a memorial for old weather patterns vanishing due to the climate change.

3. Workshop Afterlife

At the end of the workshop, we proposed several ideas for the workshop 'afterlife' to maintain the connections we built and continue in our productive exchange. Stefan proposed making a collaborative 'memorial chimera' in the form of a 'mass memorial T-shirt' with all the prototype ideas co-designed at the workshop. We also discussed the possibility of implementing the memorial prototypes in everyday life contexts. Our group decided to execute the inflatable sky dancer totem as part of the upcoming festival Nasuti in Bratislava (SK). The totem is now in progress. The Everything Dies workshop is thus still 'alive', nurturing long-term, and hopefully fruitful, collaborations.

Discussion

All three events that we have unpacked followed the goal of creating an experimental and provocative but also accessible and collaborative space where participants could learn about, and critically reflect on, current socio-ecological challenges. Each event approached the festival theme Designing in Troubling Times from a distinct perspective and leveraged participants' personal experiences as a springboard to explore symptoms and consequences of more complex social and environmental issues. From unsustainable food processes to urban heat islands and anthropogenic obsession with human-centeredness, the events addressed complicated global problems, and by using various down-to-earth experimental methods and techniques, created conditions for collaborative, imaginative and critical engagement of diverse public audiences.

Danielle's salon used co-creative crafting with simple food materials found in participants' home pantries to support impromptu ideas and unfolding creativity. The hands-on engagements with familiar food items such as honey or soil provided a convenient context to discuss intimate food practices, connect them to larger food system issues, and imagine better ways to lead healthy, sustainable and ecologically entangled lives. Through all these activities, the salon helped us to recognise how our ecosystems are affected by our day-to-day human existence and the 'shit' we leave behind. Juli followed methods from futures and speculative design and used a shared Miro board to orchestrate a DIY collaging of call-to-action posters, with no requirements on participants' design skills. Her workshop was more task-oriented, following a scripted, almost textbook-like futuring process of

critical reflection and speculation. The workshop provided a fertile ground for swift guided research into climate change issues that culminated with imaginative proposals for sustainable urban futures. Stefan's workshop did not follow a specific design method, technique or tool and, instead, let participants choose their preferred working approach. The resulting memorial prototypes had multiple forms, including Google Draw sketches and proposals for live performative actions. The option to collectively decide what and how we want to design supported a relaxed, friendly atmosphere and the workshop cultivated a long-term continuity of initiated collaborations.

These diverse experimental design approaches had advantages as well as drawbacks. Juli's guided and scripted approach was effective: having the step-by-step workshop activities outlined in the shared Miro promoted a quick workshop flow. However, since we were working mostly individually and there was less space for discussion, it was felt that a follow-up event was needed to unpack the researched issues in better detail. In contrast, participants at the other two events had a better chance to discuss issues and exchange ideas: Danielle gave an information-packed lecture and provided enough time for us to digest and reflect in small groups. Stefan's event was the least scripted and provoked us to work together closely throughout the workshop to come up with ideas that were relevant to our group interests. The collaborative designing at both events was useful for exploring the outlined issues from our diverse personal perspectives, while introducing a plurality of opinions. At the same time, Juli's individual 'rapid-learning' approach was an efficient way to consume a lot of practical UHI information in a short time. In all cases, the experimental design and research processes stood over the end products (posters, prototypes, collages) and the emphasis was put on learning and mutual knowledge transfer. The co-created artifacts emerged as outcomes of our practice-based critical engagements with the socio-ecological challenges that we addressed at the events and that we face in the world today.

These engagements provided an opportunity to learn about various causes and existing as well as anticipated consequences of these troubles and understand them better. Drawing on the evolving knowledge co-produced at the events, we were able to articulate a variety of reflective and imaginative ideas for what a sustainable future could look like. From down-to-earth proposals to support hands-on food learning in schools to more extravagant (yet still plausible) plans to design a memorial for dying weather patterns, or introduce a Universal Basic Green income to support environmental justice. The three events also showed that such experimental hands-on design engagements are feasible even in these extreme, socially distant times. Even though we were physically apart in Zoom windows, we engaged in exciting materially rich design activities, had inspiring conversations, and learned new things. Despite our initial frustration as curators with moving the festival into a virtual space, the events (and many other parts of the festival program) have helped us to see the online environment as an opportunity for new experiments, rather than

necessarily a limitation. Each of the analyzed events was a compelling and inspiring response to the question: w*hat and how can we design in these troubling times to support a positive change?*

Conclusion

We presented our discussion of three experimental design events that took place at the online Uroboros festival and engaged participants with a wide range of contemporary socio-ecological challenges. While drawing on our first-hand experience of curators-as-participants, we elaborated on the events' themes and the diverse experimental design approaches they employed to provoke reflective activities and debates. These observations are subjective and we are not suggesting that some of the approaches are better or worse. Instead, we aim to present three viable – and hopefully inspiring – ways how designers can engage with social and environmental issues to stimulate critical thinking and imaginations of sustainable futures.

It can be argued that merely meeting at a workshop and imagining better futures is not enough: at a time when a radical change to transform beliefs, values, practices, lifestyles and means of production is urgently required, we need implementable solutions. Proposing solutions that are effective, equitable and responsive to people's situated needs is a complex, contested process that is interwoven with socio-economic infrastructures of power, and certainly requires more than a design workshop. Still, if we cannot imagine how desirable futures could look and what a positive change should entail, we have nothing to start with.

As pointed out by researchers across fields, collaborative and imaginative arts practices hold an important transformational potential: they can impact people's feelings about issues and provoke immediate reflections, which is more powerful than addressing thought alone and more likely to result in longer-term change, since it is closely related to self-identity (Coelho et al. 2010; Light et al. 2019). Imaginaries of future situations can provide further orientation in decision making to help people grasp existing issues and realize how they may affect their lives (Nikoleris et al. 2017; Raven 2017). Thus, inspiring people through imaginative, creative means to act positively on their socio-ecological environments can support their critical engagement with the issues at hand, change their degree of commitment, and inspire collective reflection and action.

We believe that leveraging design's creative world-making capacities to help people come together, experiment, think, reflect and engage with imaginative future proposals can serve as a small yet important step towards larger socio-ecological changes. This of course requires having a careful process of continuous self-reflection in place, and that we keep asking ourselves: what differences is our design research actually making? Who decides what should be changed? Who

should evaluate if this change is 'good' and what should the evaluation criteria look like? Long-term continuity of co-creative efforts to help assist sustainable social transformation is certainly desirable. As our choice of the Uroboros festival symbol suggests, this continuity is central to our agenda. In 2019, we proposed Uroboros as an ongoing initiative to be built around an evolving and diverse network of design researchers, practitioners, and others who wish to be involved. Several network activities, including the Uroboros Bites series of online experimental interventions combined with a physical exhibition in the DOX center, have been put in place.[15] The Uroboros 2021 festival is ahead and the looping Uroboros circle is always open to new ideas and inputs.

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1 https://www.uroboros.design/
2 Acknowledging that ecological sustainability will only be attained by addressing social sustainability, the SDGs point to 16 aspects in need of balance, including decent work, social equity, responsible consumption, and economic development (https://sustainabledevelopment.un.org/).
3 While acknowledging that there are other design initiatives and festivals that share the same goal and aim for radical openness – examples include Pixelache festival and network (https://www.pixelache.ac/), Pif Camp (https://pif.camp/), and Dinacon (https://www.dinacon.org/).
4 https://www.youtube.com/channel/UCQwv_jy_s9mgm2_HSTFkQUg
5 https://www.alttab.design/
6 https://www.dox.cz/en
7 Examples include: CreaTures (https://creatures-eu.org/), AMASS (https://cordis.europa.eu/project/id/870621), Transition Design program at CMU (https://transitiondesignseminarcmu.net/); UAL Social Design Institute (https://www.arts.ac.uk/ual-social-design-institute); Design Research for Change symposium (https://www.designresearchforchange.co.uk/symposium2019/).
8 https://zoom.us/
9 Recording is available at https://www.youtube.com/watch?v=Vn875XLl7yE&t=1049s.
10 Here referring to the end product of digestion; bodily waste; feces; excrements.
11 Recording is available at https://www.youtube.com/watch?v=QGOb8BPh7Ig&t=1066s.
12 https://miro.com/
13 Recording is available: https://www.youtube.com/watch?v=xg1FYyAfWKk.
14 http://letdeathdanceagain.net/
15 Uroboros Bites is underway by autumn 2020, more details at https://www.uroboros.design/uroboros-bites.

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