

TROUBLING THE IMPACT OF FOOD FUTURE IMAGINARIES

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ABSTRACT

Global scale transformation is urgently required if we hope to stabilise socio-ecological systems. While design contributes to social and ecological un-sustainability, it can also play a pivotal role in bringing us towards more positive, inclusive ways of living and being within the planetary ecosystem. Experimental, co-creative design provides powerful tools for prompting critical thinking and inspiring new imaginaries. We engage with these possibilities, and explore their role in societal transition. We present an experimental food design workshop that aims to engender fantastical and plausible possibilities for regenerative (more-than- human) future food practices. We reflect on how to move from such imaginaries to ‘implementable nows’ that is, transformative innovations that might be enacted today. We provide inspiration and methodological guidance for designers interested in the social imaginaries brought forth through world-making efforts; leapfrogging the adjacent possible and reorienting situated practices towards better – socio-ecologically just – futures.

INTRODUCTION

Ecological and humanitarian crises are rendering life precarious on an unprecedented scale. If humans are to flourish within nature, we must urgently transition towards resilient and restorative futures. Such transition

requires radical shifts in economic, political, social and material ways of living and being (Leach et al. 2013). The scale of this transformation is challenging to grapple with; the futures uncertain; notably different from life as we know it. Much work is being done in design to afford societal transitions (e.g. Björgvinsson et al. 2012; Escobar, 2018; Irwin, 2015; Light, 2019, Wilde, 2020). As part of this effort, we propose that robust transition requires a 4-step process, in which stakeholders: 1) imagine desirable futures that are resilient, regenerative and transcend current socio-technical constraints; 2) prototype towards these new imaginaries, engaging with contemporary practices and situated concerns; 3) negotiate infrastructuring challenges, to ensure they are working towards realistic alternatives; and 4) identify impediments to scaling out, to understand if and how promising experiments might be transferred – adopted and adapted – to other contexts of action (Wilde, 2020; Wilde et al., 2021).

Design is complicit in the planetary problems we are facing (Papanek, 1972), but also potent in provoking imaginative, reflective situations that can bring together diverse stakeholders in meaningful co-creative exchange (Hesselgren et al. 2018). Designers have long been experimenting with methodologies, theories and practices to stimulate transformative thinking and action (Maldonado, 1972). Such experiments are critically needed, at locally-situated scales. They must come from a place of humility, rather than (perhaps unconscious) hubris and acknowledge the planetary embeddedness of actions and their unimaginable impact, if we are to find a way forward.

We present a two-part workshop that engages the methods and techniques of experimental food design research (Davis et al., 2020; Dolejšová et al. 2020). The objective was to explore possibilities of transitioning

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human food and technology practices toward resilient, regenerative and justice-oriented (more-than-human) futures; to co-create new social imaginaries for the food system, both fantastical and plausible. In short, to embody step 1 of the above-described transition process. This work hinges on the understanding that social imaginaries – collective beliefs about how society functions – ‘can enable or disable societal transformation and are critical to its realisation’ (Jassanof & Kim, 2015). We thus set about unfolding new worlds, to ‘arouse an appetite for what might be possible’ (Haraway, 2011); materially interrogating design methodology, through critical exchange among diverse scholars and creatives.

Our workshop is designed to trouble the role of speculation within the afore-mentioned 4-step transformation process, so we might better understand how to move from future visions to ‘desirable implementable nows’ (Wilde, 2020) – to move from ideas to action. In the second part of the paper, we thus raise the question of how designers in diverse contexts of action, with different cultural, political, socio-economic and environmental pressures and concerns, might prototype their way towards desirable new imaginaries; scale out their practices; and lay the groundwork for realistic alternatives. Specifically, we ask: *How might designers leverage the results of their world-making efforts, use them to leapfrog the adjacent possible, and reorient current practices towards envisioned – socio-ecologically just – futures?*

As design researchers, we are not the first to grapple with these questions. Transition Design and Strategic Design, for instance, engage with these processes for shepherding transformation, shifting scales from the personal and local to the planetary (Boyer et al. 2011; Irwin, 2015). We amplify this process by holding focus at the scale of the body and embodied imagining. We access phenomenologically grounded ideation, to broaden and personalise understandings of issues at stake, gain access to new perspectives and enhance meaning-making (Höök, 2018; Wilde et al. 2017). Further, we focus the inquiry in the intimate realm of food and eating. This bracketing enables us to consider processes that are global in scope (e.g., climate change, industrial food production), yet intensely personal in their unfolding (e.g., reduced availability of seasonal produce). It allows us to leverage collective action at a range of scales, using interpersonal, locally-situated and embodied experimental food design practices to bring planetary and societal issues to a scale at which they can be co-creatively reflected upon and interacted with by interested individuals.

Next, we introduce the practical and methodological background of the workshop, and provide critical reflection of the processes and outcomes. We do not pretend to have answers to the questions we raise. In the tradition of research, we raise questions that operate at a range of scales. Our intention is to unfold those scales,

expose them to scrutiny, and invite the design research community to join us in our inquiry.

ENVISIONING SUSTAINABLE FOOD FUTURES

Experimental Food Design for Sustainable Futures was a two-day conference workshop that used food as research object and accessible starting point from which to explore values, concerns and imaginaries associated with food futures and climate resilience. Human-food practices are amongst the most significant contributors to urgent global challenges (Willet et al. 2019). Our workshop proposed co-creative, experimental reflection on food issues, to engender ideas around system transformation. It involved 33 participants of diverse social, geographical and professional backgrounds. It was held online, over two days, and consisted of two distinct, yet thematically intertwined sessions.

Day 1 – *Fantastic(e)ating Food Futures: Reimagining Human Food Interactions* examined interdependencies between food, technology and social practices. The intention was to critically engage with ways that food-technology innovation might afford or hinder future flourishing. Technology is often hailed as a change-maker. Yet, it may have ambivalent impacts on food cultures (Davis et al. 2020). Food-tech propositions – such as cooking with smart kitchenware or high-tech farming – are contested areas navigated by multiple human and non-human stakeholders (Dolejšová, Wilde et al. 2020). The day-1 activities sought to examine: *What changes do food technologies bring into everyday life? How might we incorporate more-than-human values into food-tech futures? How might we leverage imaginative design approaches to scaffold development of fantastical and sustainable food-tech cultures?*

Day 2 – *Designing with More-than-Human Food Practices for Climate Resilience* sought to further unfold the potential of more-than-human food practices for supporting regenerative, climate-resilient food futures. The activities drew on a rich variety of existing projects tackling food sustainability, observing how many of these projects fail to acknowledge multi-species plurality (Dolejšová et al. 2020). We invited participants to reflect on these examples and imagine ways of including more-than-human perspectives in sustainable food transformations. The aim was to shift the focus of co-creative thinking from *fantastical* to *plausible* food futures, and contribute creative visions that might be fed forward towards positive transformational change.

EXPERIMENTAL FOOD DESIGN

As authors, we share a commitment to experimental research through food design. Food has useful qualities for transformative design research. Human-food practices – how we eat, provision and dispose of food – are connected to local culture and identity, yet are

global in their impact. The multi-species food web on the planet is dense, thick and multi-faceted. Food practices bring focus to our position in this food web (who eats whom; why) and confront the eater with transformation-related questions, embedded in the minutiae of everyday life. Food practices are commonly relatable, situated and personal. They unfold at the scale of the body – the scale at which people readily operate, think and imagine. And while technologies expand our scope for where we imagine our bodies begin and end (Wilde et al. 2017), it remains challenging for most people to think beyond the timescales of a human life. Indeed, perhaps the greatest challenge with climate change is that it unfolds over geographical and temporal scales that sit outside this ‘human’ scale. Food is social glue; foodstuffs are materially fantastic. Unlike other design materials, food is edible, perishable and compostable, and as such supports research through ecologically accountable design. And, while this workshop was delivered online, food materials still served as prototyping ingredients. Foods were physically present in participants’ remote locations, digitally present in our shared Miro workshop setting, and vibrant in our sensory imaginations.

THE WORKSHOP

The two days in the workshop enabled us to consider the move from fantastic(e)ating to plausible envisioning. Both days focused on hands-on experimental design methodologies, and leveraged the collaborative possibilities of Zoom and Miro. Working remotely, participants shared food-related boundary objects and ingredients from their home pantries; engaged in foraging walks in their kitchens; used bespoke food design props; and co-designed food futures proposals in Zoom breakout rooms. Throughout, the shared Miro workplace enabled participants to bring together notes, observations and (representations of) food materials to create visually-rich proposals that we frame as experimental recipes (Figures 1,2).

DAY 1: FANTASTIC(E)TING FOOD FUTURES

The day-1 task was to reflect on existing food-tech issues and create recipes for fantastic picnic meals. The resulting ‘meals’ represent propositional food-tech futures: technological innovations designed to support new forms of eating together among diverse (more-than-human) eaters. The recipe prototyping process was supported by a deck of Food Tarot cards,² which presents 22 imagined food tribes – e.g., *Datavores* and *Turing Foodies* whose diets are radically shaped by technological advancement. The Tarot deck was distributed before the workshop. Participants were asked to select a card, choose an item from their home that represents the food-tech practice shown on the card,

and film a short video that presents themselves, their object and the card as a boundary proposition. We began the workshop by viewing the videos as a single showreel. They thus served as a means of participant introductions. Visual representations of the selected personal food items – home-made foodstuffs, utensils, edible plants, and more – were then uploaded into a Food Swap Pantry located in Miro (Figure 1). The Pantry served as the mainstay of ingredients for the workshop activity – the task of prototyping recipes for fantastic picnic meals. We formed groups based on participants’ shared interests, food-related background and diversity of geographical location. Working in breakout rooms, each group collectively envisioned a food-tech future and co-created a picnic recipe inspired by a simple instruction set, and the ingredients in the Pantry. We describe two outcomes:

Inspired by the *Ethical Cannibals* and *Gut Gardeners* Tarot cards, *Cannibalistic Pickn’ick’ for Homo Sapiens* proposes the human body as a farm (Figure 3). The recipe envisions a local peer-to-peer system for sharing of edible resources cultivated in and on human bodies (e.g., urine, milk). It foregrounds broken global food supply chains and unevenly distributed food resources, which result in food shortages as well as brimming supermarkets the world over. Acknowledging the need for radical change, the recipe proposes self-replenishing human bio-materials as a nutritious resource for human and non-human eaters. Through its fabulations, the recipe asks: *What if breast-feeding reaches beyond the mother-child relationship? Why not use human cells in lab-grown meat? Why is using human-based bacteria to fertilise soil not globally normalised?* In some cultures, human faeces are composted, others propose composting the entire body.³ The *Cannibalistic Pickn’ick’* recipe proposals thus sit within the realm of the adjacent possible. However, their implementation may require a shift in values. The recipe raises for debate the taboos that prevent people from ‘eating themselves’ in ethical and consensual exchange. It invites reimagining of the role of (more-than-) human bodies in supporting regenerative food futures.

The Nutritious Dating – Flourishing recipe (Figure 4) introduces a more-than-human dating sequence bringing together gut bacteria, trees, technology and potential lovers to connect love relationships to multi-species flourishing. Inspired by the *Nutri Amorists* and the *Turing Foodies* cards, the sequence is designed to track physiological signs of arousal in a person (‘the lover’), to find them a perfect match (‘a(nother) lover’). A swallowable ‘butterfly pill’ gut sensor tracks the butterflies in the ‘lover’’s stomach and an ‘AI bucket’ with fermented cabbage collects their spit for evaluation and matching. The matched couple then proceed on a

² <https://foodtarot.tech/>

³ <https://recompose.life>



Figure 1: Left: Snapshot of the Food Swap Pantry and empty Miro workspace for Day 1 (Full board details available at: <http://bit.ly/day1-pre>). Right: Post-workshop workspace with co-created recipes for picnic meal prototypes (<http://bit.ly/day1-full>).

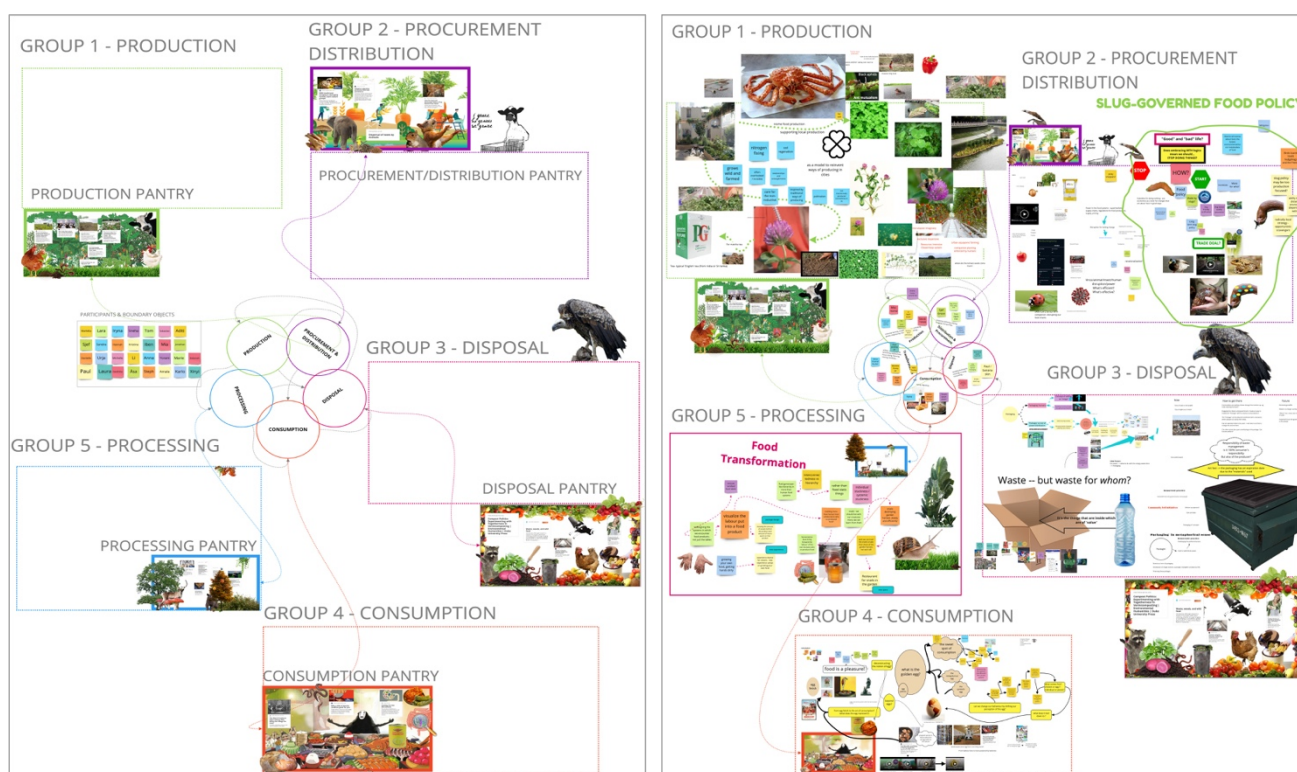


Figure 2: Left: Pre-stocked pantries and food-system area workspaces for Day 2 (<http://bit.ly/day2-pre>). Right: Co-created recipes for more-than-human food practices (<http://bit.ly/day2-full>).

needs of stakeholders from often marginalised areas of the socio-economic ‘food chain’. The recipe serves as a reminder that, just as packaged goods may expire, our time is running out. Bottom-up climate proposals coming from the peripheries – from stakeholders who have intimate knowledge of situated challenges – must be considered and acted upon. This recipe-for-action points to implicit value judgements when considering what it means to be human. In many societies, there are people designated by some as ‘less than-human’. The values of more-than-human food practices can only come into play when all human and non-human stakeholders in the food system are acknowledged and respected – when they are valued.

DIGESTING THE WORKSHOP

The recipes resulting from the workshop do not provide exact ingredient lists or precise measures. Rather than being step-by-step guides for cooking up better futures, they reflect on existing food issues and present proposals for alternative approaches that embrace values of inclusivity, multi-species pluralism and socio-ecological restoration. They echo emergent concepts in transformative design, such as Escobar’s (2018) notion of *radical interdependence*, and Puig de la Bellacasa’s (2017) *more than human care*. These concepts are increasingly present in discourses around decolonising design (e.g. Calderón Salazar & Huybrechts, 2020; Liu et al. 2019; Nold, 2018; Pennington, 2018). They foreground the need for relational co-existence and respectful ways of living and being together in order to support the repair of our worlds. They highlight that all actors – living and non-living – are deeply interconnected, and stress the importance of empowering local (multi-species) communities to meet their situated needs. The discussed recipes by no means fully encompass these transformative design concepts in their complexity – and do not aspire to do so – but they share intentions. By situating these radical concepts within the context of food practices, the recipes serve as a provocation to rethink socio-economic and human-centric hierarchies in food systems towards future flourishing.

To thicken our understanding of the impact of collective food design experimentation, we ran a qualitative survey with our workshop participants. We asked in what ways their experience informed their thinking about food futures and what they found enjoyable or challenging. The workshop involved participants from a variety of professions and practices including designers, researchers, artists, growers. Among the 9 respondents (R), many noted the value in working with such a diverse group: “everyone gave their input from very different perspectives so we ended up with very creative solutions” (R4). This diversity helped to surface food system hierarchies and tensions: “I will be thinking about the notion of ‘less than human’ design and Western attitudes to design and food futures” (R1). Some were inspired to pursue further explorations: “The idea of self-cannibalism is something I would be

exploring in the future” (R2); and engage in newly-discovered practice: “It reminded me of the waste disposal problems around us and got me deeply involved in reuse of menstrual blood” (R2). In general, participants perceived the workshop activities as actionable: “I was offered a grand perspective on action.” (R8); “there is an urgent need for more of this type of thinking to be centred within innovation, and by research funders” (R1).

These reflections confirm our first-hand impressions that the workshop was stimulating, supported mutual learning, and planted seeds for further action. As authors, this is encouraging. However, we have long-term goals to maintain a continuity of conversations provoked through such activities. The workshop described here is part of an ongoing series of activities that interdependently interrogate the methodological value of experimental design research towards societal – particularly food system – transformation. These activities take place in diverse venues. They serve as collective inquiries and outreach efforts to nurture a community of contributors interested in food system transformations. To understand how successful these efforts may (not) be, we need to critically reflect on what our design research practices do in the world, and engage with the diverse scales at which we are, and aspire to be, operating. Following, we reflect on the workshop outcomes against the background of our longer-term design research practice, and unpack some opportunities and challenges we encounter.

ANTICIPATING IMPLEMENTABLE NOWS

At the beginning of this article we proposed that robust transition requires a 4-step process, in which stakeholders: 1) imagine desirable futures that are resilient, restorative, regenerative and transcendent of current socio-technical constraints; 2) prototype towards these new imaginaries, while engaging with contemporary practices and situated concerns; 3) negotiate infrastructuring challenges, to ensure the work is oriented towards realistic alternatives; and 4) identify impediments to scaling out, to understand if and how promising experiments might be adopted and adapted to other contexts of action (Wilde, 2020). The workshop activities described here activate step one. Our ongoing work reflects on steps two to four, on how stakeholders (including design researchers) might leverage new social imaginaries to *prototype, negotiate and identify* desirable alternatives, leapfrog the adjacent possible, and reorient current practices towards envisioned, better futures (c.f.: Wilde et al., 2021). The intention of this work is that these futures might become not only preferable or plausible, but increasingly probable, when considered through varying cones of futures (e.g. Voros, 2003) and non-linear notions of transitional (design) histories (Göransdotter, 2020).

Our two-part workshop gave rise to a variety of recipes that unearth dilemmas related to sustainable food

system transitions. Some are playful, others more pragmatic. They all provoke creative thinking and inspire interest towards longer-term reflective action. The 2-day workshop program facilitated a shift from fantastic to plausible imaginaries (day 1 / day 2). Yet, it did not require participants to infrastructure their proposals or think seriously about implementability in real-life contexts. The workshop recognises the importance of social imaginaries in societal transformation (Jassanof & Kim, 2015) and align with design futuring methods (e.g. Blythe et al., 2016; Dolejšová, Wilde et al., 2020).

Imagining futures is hardly sufficient to bring them into being. We now seek to understand how to kick-start the infrastructuring process, while staying true to the radical imaginaries brought forth in our world-making. We are interested in efforts made, for example by Auger et al. (2017), Boyer et al. (2011), Björgvinsson et al. (2012) Irwin (2015) and LeDantec and DiSalvo (2013), to infrastructure new imaginaries and implement change. We recognise, as they do, that infrastructuring invigorates democracy and sustains participation at community and societal scales. We also look beyond design research practice to see if we might further expand our thinking, and at the same time scaffold new audiences for the possibilities afforded through experimental design.

In 2018, UNESCO outlined eight key competencies crucial for people to think *and act* in favour of sustainable development (Leicht et al. 2018). One of them, Anticipation (Poli, 2017), involves commoning issues to arrive at new perspectives; from this new position developing new imaginaries, backcasting and then negotiating the infrastructure needed to transform the imaginaries into what Wilde (2020) calls ‘implementable nows’ – transformative innovations that can be enacted today. In contrast to forecasting, a backcasting approach begins by working backwards from (radically) different images of the future towards the present in order to gain a deeper understanding of the feasibility of these futures and what measures would be required to achieve them (Dreborg, 1996). It enables people to forge new relationships and cross-sectional collaborations, and reorient themselves towards more desirable futures. Anticipation thus leverages design’s world-making capacities to generate new practices, policies, technologies and relationships; ensuring these are personally meaningful, contextually relevant and ecologically impactful. When anticipation is enacted through experimental design practices, it draws on, and can maintain centrality of radical creativity in the transition process (Light et al. 2019). Inspired by these possibilities, we are working towards a deepened understanding of how to enact the full 4-step

transformation process in ways that honour the wildness of design future imaginaries. In this direction, we offer an anticipatory backcasting workshop at Nordes 2021, with future food transitions as the thematic context (Wilde et al., 2021). This move at once brings issues to the scale of inter-personal experience and allows us to scale out and around our intentions to – imaginatively and concretely – infrastructure societal transition.

SCALING OUR PRACTICE

As a loose collective of researchers,⁴ our efforts constantly shift scales. We conduct situated design research events, workshops, future food enactments, salons and more; across academia, industry, government and civil society. These efforts deepen and enrich our inquiries. They foster productive exchange across the food and transition landscape and constitute network building. To nurture this network of sustainable food transition, we constantly seek new contributors from diverse areas of expertise. All entities on the planet are implicated in the futures to come, and we thus consider collaborating with diverse stakeholders as both necessary and ethical.

These collective, albeit interdependent efforts reach from situated first-person perspectives to co-creative group engagements to planetary impact. This *scaling out* of our practice is non-trivial. Scaling out, as understood in transitions theories, involves the replication of a successful and/or desirable intervention through its iterative, situated duplication in different sites (Moore et al., 2015). It stands in inherent opposition to the strategy of *scaling up*, which follows a commercial-economic expansionist dogma of ‘growth at any cost’, celebrates centralisation, and is thus deeply embedded in many of the least sustainable industrial practices (e.g. meat and dairy farming). In contrast, scaling out as a strategy for community growth, aims at building capacities that can proliferate across contexts and over time, rather than products or solutions (Lampinen et al. 2019). Our efforts at building a distributed network for food futures transitions embraces such scaling-out to foster rich, multi-faceted and sustainable ground from which buds of better futures – not only in food systems – might sprout.

We use a variety of tools and formats to put this process in motion. From the workshop we report here, we collectively developed a co-authored, open-access book to ferment our ongoing thinking. The *More-than-Human Food Futures Cookbook*⁵ includes all 11 recipes co-developed in the workshop, and is co-authored by the attendees. As a compilation, it serves as a tool for scaling the workshop into a longer collective reflection. It prioritizes diversity and collects ideas which bring forth idiosyncratic concerns. By shaping these ideas

⁴ <http://foodfutures.group>

⁵ <https://cookbook.foodfutures.group/>

together into an aesthetically cohesive format, the Cookbook juxtaposes differences and becomes a stepping stone towards a more open, distributed ‘sprouting’ of our food transitions network.

The Experimental Food Design workshop was held online, on a free-entry basis. We were thus able to include food practitioners from outside of the usual conference realm. As noted by one survey participant: “I would like to acknowledge that this transition [to online] allowed me to access a conference and workshop that I wouldn’t usually have access to, as I am both outside academia and on a low income. I really enjoyed being able to collaborate with like-minded people in different countries and hope this is something I can continue to do.” (R1). We take comments like this seriously and recognise through all of our work a need to bring forth alternate mechanisms for sprouting growth and aliveness in our network. We consider collective projects like the Cookbook to be important (if small) steps in this direction, and recognise that these efforts are appreciated. As R5 explains: “The challenge is less working together during the workshop, but more what happens afterwards. So often ideas get lost – so I really appreciate your efforts with the cookbook” (R5).

We remain committed to fostering an understanding of how to care for ‘what happens next’. To keep enhancing public accessibility of our events, and support pluralistic, disseminated sustaining of our network, we propose a variety of upcoming activities: an online reading group; a series of informal seminars; a collaboratively organised workshop at a public festival; and more. These activities focus on scaffolding the internal workings in the network and fostering new – perhaps unexpected, unthought-of, surprising – forms of knowledge production among those who share interest in sustainable food transitions. We hope our efforts sprout fruitful connections and support a gradual proliferation of the network and its concerns.

CONCLUSION

There is no widely acknowledged recipe for what constitutes a successful, transformative design research practice. The transformative power of experimental design research and the question of what design can do in the world has been at the centre of scholarly (and other) debates for more than a decade. Experimental inquiries into the transformative potential of creative arts and design practices are emerging (e.g. Dolejšová et al., 2021). What we offer here is a humble contribution to these ongoing efforts in the form of first-hand reflections from our collective experimental food design research practice. In a world where nothing is certain, we consider design research experiments that engender alternative, desired ways of living – of eating, procuring, distributing and otherwise sharing food together – to be a potent approach towards future

flourishing. The participant responses to our survey suggest that the workshop described here makes modest moves in this direction, by fostering individual and community resilience, across practices and scales. We hope that our experiences and reflections inspire other fellow travellers to intertwine their metaphorical growth with our own.

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REFERENCES

- Auger J, Hanna J. and Encinas E. (2017). Reconstrained Design: Confronting Oblique Design Constraints. Nordes 7.
- Blythe, M., Andersen, K., Clarke, R. and Wright, P. (2016). Anti-solutionist strategies: Seriously silly design fiction. In *Proceedings of the 2016 CHI Conference on Human Factors in Computing Systems*, p.4968-4978.
- Boyer, B., Cook J.W. and Steinberg M. (2011). In studio: Recipes for systemic change: Helsinki design lab: Sitra.
- Calderón Salazar P. and Huybrechts L. (2020). PD otherwise will be pluriversal (or it won't be). In *Proceedings of the 16th Participatory Design Conference 2020-Participation (s) Otherwise - Volume 1*. 107-115.
- Davis, H., Wilde, D., Altarriba Bertran, F., and Dolejšová, M. (2020). Fantastic(e)ating Food Futures: Reimagining Human Food Interactions. In *Companion Publication of the Designing Interactive Systems Conference*. Association for Computing Machinery, New York, NY, USA.
- Dolejšová, M., Ampatzidou C., Houston L. et al. (2021). Designing for Transformative Futures: Creative Practice, Social Change and Climate Emergency. In *Proceedings of the Creativity & Cognition 2021 conference* (In Press).
- Dolejšová, M., van Gaalen, S., Wilde, D., Raven, P.G., Heitlinger, S., and Light, A. (2020). Designing with More-than-Human Food Practices for Climate-Resilience. In *Companion Publication of the Designing Interactive Systems*

Conference, Association for Computing Machinery, New York, NY, USA

- Dolejšová M.*, Wilde D.*, Altarriba Bertran F., Davis, H. (2020). Disrupting (More-than-) Human-Food Interaction: Experimental Design, Tangibles and Food-Tech Futures. In *Proceedings of the 2020 ACM Designing Interactive Systems Conference*. 993-1004. *co-first authors
- Dreborg, K.H. (1996). Essence of backcasting. *Futures* 28: 813-828.
- Escobar, A. (2018). Designs for the pluriverse: radical interdependence, autonomy, and the making of worlds. *Duke University Press*.
- Haraway, D. (2011). SF: speculative fabulation and string figures: *Hatje Cantz*.
- Hesselgren, M., Eriksson, E., Wangel, J., et al. (2018). Exploring Lost and Found in Future Images of Energy Transitions: Towards a Bridging Practice of Provoking and Affirming Design. *DRS2018*.
- Höök, K. (2018). Designing with the body: Somaesthetic interaction design. *MIT Press*.
- Irwin, T. (2015). Transition design: A proposal for a new area of design practice, study, and research. *Design and Culture* 7: 229-246.
- Jasanoff, S. and Kim, S. (2015). Dreamscapes of modernity: Sociotechnical imaginaries and the fabrication of power. *University of Chicago Press*.
- Lampinen, A., Rossitto, C. and Gradin Franzén, C. (2019). Scaling Out, Scaling Down: Reconsidering growth in grassroots initiatives. *Ethnographies of Collaborative Economies Conference*, Edinburgh, Scotland, UK, 25 October, 2019.
- Le Dantec, CA. and DiSalvo, C. (2013). Infrastructuring and the formation of publics in participatory design. *Social Studies of Science* 43, 2: 241–264
- Leach, M., Raworth, K. and Rockström, J. (2013). Between Social and Planetary Boundaries. In *ISSC/UNESCO, World Social Science Report 2013: Changing Global Environments*, 84–89.
- Leicht, A., Heiss, J. and Byun, W.J. (2018). Issues and Trends in Education for Sustainable Development. *Paris: UNESCO*.
- Light, A. (2019). Redesigning Design for Culture Change: Theory in the Anthropocene. In *Design Research for Change. Design Museum*, London.
- Light, A., Wolstenholme, R. and Twist, B. (2019). Creative practice and transformations to sustainability – insights from research. *SSRP Working Paper No1, Sussex University*.
- Liu, S.-Y., Bardzell, S. and Bardzell, J. (2019). Symbiotic encounters: HCI and sustainable agriculture. Paper presented at the Proceedings of the 2019 CHI Conference on Human Factors in Computing Systems.
- Maldonado, T. (1972). Design, Nature, and Revolution: Toward a Critical Ecology. *Minneapolis, MN: University of Minnesota Press*.
- Moore, M., Riddell, D. and Vocisano, D. (2015). Scaling out, scaling up, scaling deep: strategies of non-profits in advancing systemic social innovation. *Journal of Corporate Citizenship*, 58: 67–84.
- Nold, C. (2018). Practice-based ontological design for multiplying realities. *Strategic Design Research Journal*, 11(2), 58-64.
- Papanek, V. (1972). Design for the Real World: Human Ecology and Social Change. *Thames and Hudson London*.
- Pennington, S. (2018). Taking Care of Issues of Concern: feminist possibilities and the curation of Speculative and Critical Design. *DRS2018*.
- Poli R. (2017). Introducing anticipation. *Handbook of anticipation*, 1-14.
- Puig De La Bellacasa, M. (2017). Matters of care: Speculative ethics in more than human worlds. *U of Minnesota Press*.
- Voros, J. (2003). A generic foresight process framework. *Foresight*. 5. 10-21.
- Wilde, D. (2020). Design research education and global concerns. *She Ji: The Journal of Design, Economics, and Innovation* 6, 2, 170-212.
- Wilde, D., van Gaalen, S., Dolejšová M., Ravan, P. G., Trahan, S., Karyda, M. (2021). Backcasting [better] Futures. In *Proceedings of the Nordes 2021 Nordic Design Conference*. (In Press).
- Wilde, D., Vallgård, A. and Tomico, O. (2017). Embodied Design Ideation Methods: Analysing the Power of Estrangement. In *Proceedings of the 2017 CHI Conference on Human Factors in Computing Systems*, 5158–70.
- Willett, W. et al. (2019). Food in the Anthropocene: the EAT–Lancet Commission on healthy diets from sustainable food systems. *The Lancet* 393, 10170, 447-492.