

**Collective Climate Imagination:
Towards a Collective Imagination and Design Practice
for Transformative Climate Adaptation**

Reflective documentation

Part of the thesis project "Collective Climate Imagination"

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Collective Climate Imagination

I hereby declare that I have independently written/produced the reflective documentation of my thesis in accordance with the principles of good scientific practice and have not used any sources and aids other than those indicated, and that this reflective documentation has not yet been submitted in any form for evaluation, neither in Austria nor abroad.

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¹ FINTA stands for female, intersex, non-binary, trans and agender people.

ABSTRACT

Humanity is on the brink of a non-linear climate experimentation. Conventional solutions can't solve our polycrisis; we need collective imagination to envision and create radically different ways forward.

This practice-based research investigates how collective imagination practices can catalyze climate action and adaptation in European cities. It explores transformative climate adaptation, the role of experiential interventions in surfacing emotions about climate futures and changing assumptions, and mindsets for organizing collective imagination work.

The research methodology combined participatory design approaches with auto-ethnographic reflection, culminating in the creation of an imagination collective. This collective developed and implemented multiple interventions, including two scenario narratives examining climate resilience and three place-based experiential interventions bringing together climate practitioners, and a framework for designing experiential climate scenarios.

Key findings demonstrate that the long-term, fundamental changes needed are not connected to current climate adaptation plans, and how embodied, emotions-based approaches can help surface often-overlooked emotional and imaginative dimensions of eco-social change. The research shows how post-experience reflection can help shift perspectives about possible futures. It also suggests that organizing collective imagination work requires careful attention to power dynamics, trust-building, and balancing creation and resting.

This research contributes to both theory and practice by developing new metaphors for climate adaptation, creating a framework for designing for collective imagination, and establishing a living handbook for building imagination collectives. It argues that collective imagination practices constitute essential activities that catalyze social and ecological change.

Die Menschheit steht am Rande eines nicht-linearen Klima-Experiments. Konventionelle Lösungen können unsere Polykrise nicht bewältigen; wir brauchen kollektive Imagination, um radikal andere Wege zu entwickeln.

Diese praxisbasierte Forschung untersucht, wie kollektive Imaginations-Praktiken Klima-Maßnahmen in europäischen Städten katalysieren können. Der Fokus liegt auf transformativer Klimaanpassung, der Rolle erfahrungsbasierter Interventionen bei der Aufarbeitung von Klima-Zukünften und Einstellungen zur Organisation kollektiver Imagination.

Die Forschungsmethodik kombinierte partizipative Designansätze mit auto-ethnographischer Reflexion in einem Imaginations-Kollektiv. Dieses entwickelte zwei Szenario-Narrative zur Klimaresilienz und drei ortsbezogene, erfahrungsbasierte Interventionen für KlimapraktikerInnen sowie ein Framework zum Gestalten immersiver Klimaszenarien.

Die Ergebnisse zeigen, dass langfristige, grundlegende systemische Veränderungen nicht mit aktuellen Klimaanpassungsplänen verbunden sind. Verkörperte, emotionsbasierte Ansätze können übersehene Dimensionen zu öko-sozialem Wandel beitragen. Eine geleitete Reflexion kann den Effekt verstärken, Perspektiven auf mögliche Zukünfte zu verändern. Die Organisation kollektiver Imaginationsarbeit erfordert besondere Aufmerksamkeit für Machtdynamiken, Vertrauensaufbau und eine Balance zwischen Phasen des Schaffens und Ruhens.

Die Forschung entwickelt neue Metaphern für Klimaanpassung, bietet ein Gestaltungs-Framework und etabliert ein "Living Handbook" für Imaginations-Kollektive. Sie argumentiert, dass kollektive Imagination eine wesentliche Aktivität darstellt, die den sozialen und ökologischen Wandel katalysieren kann.

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INTRODUCTION

Traveling in a jacket pocket, a chestnut makes its way from Brooklyn to the newly founded state of Iowa. Six chestnuts are planted behind a farmhouse but only this one survives harsh winters, the playing kids and a fungus that infects trees all over the West Coast and continues its infestation throughout the country. This one chestnut and its development over time is documented on a black and white Kodak camera, over multiple generations of the Hoels, an immigrant family living in the farmhouse. The last son of the family to live in the house eventually leaves to join a group of tree activists in Oregon.

This is the story Richard Powers tells in the opening of his speculative fiction novel called *The Overstory*. He describes the passing of time from the perspective of a tree spanning across multiple human generations. The tree does not count days and weeks; it perceives seasons. The story shifts my temporal frame of reference, and gives me comfort in being but a blip of time in a long history of trees on earth.

While trees are usually the background, the story centers around the tree, it gives it agency and puts it in the foreground, what writer Elvia Wilk describes as “ecosystems fiction” (2022). It does a beautiful job of decentering the human and centering a tree without anthropomorphizing – the act of giving human features and projecting human experiences on a non-human being.

Reading the story filled me with awe and excitement for the tree in a way I do not feel while being near one. I felt both worried for the tree, and moved. This emotional journey I experienced while reading about trees and the relationships humans developed with them is very different from reading a document recounting the works of environmentalists from the 1990s. It was a different type of engagement – it put me in a state of imagination, exploration and active rest. It helped me make sense of a theoretical concept I had been pondering over, “tempocentrism” – “one’s

being excessively centered in one's own timeframe" (Textor in Mead, 2005). It also helped me process the thoughts I have been having about my own relationship with the more-than-human.

Elvia Wilk describes ecosystems fiction as:

"a fiction of (new) weirdness, in that it destabilizes what is known and what is knowable, and it may also be eerie, in that no single human actor or conspiracy of actors is the cause for the world's effects. Ecosystems fiction might account for the second body, and in doing so insist that figure and ground are not distinct from each other. Other divisions between human and nonhuman, technological and natural, might then begin to decompose." (Wilk, 2022, p. 20)

Similar to this, a climate or ecosystems imagination could be an imagination of (new) weirdness, one that destabilizes what is known and what is knowable, and it might also be eerie.

Humanity is on the brink of a weird and non-linear climate experimentation

Over the past centuries we have built a world that has improved standards of living for a highly visible part of the Global North, but this has pushed our planetary boundaries to the brink (Richardson et al., 2023). A small number of countries in highly industrialized countries are responsible for a disproportionately large share of historic carbon emissions (Friedrich et al., 2023) and material consumption (United Nations Environment Programme, 2024), highlighting a deep imbalance between those who contribute to the climate and biodiversity crises, and those who suffer the most effects.

Humanity is on the brink of a weird and non-linear climate experimentation: our planetary thermostat is shooting up (IPCC, 2014; Mann et al., 1999; World Meteorological Organization, 2024) and has

already surpassed the 1.5° threshold, and we will have to adapt to a fast-warming, drastically changing world (IPCC, 2007). The Middle East, India and Pakistan have long been experiencing temperatures up to 54°C (Tapper, 2016). The 2021 Western North America heatwave has brought previously unimaginable extreme heat of 49.6°C to the Global North, and alone during the work on this PhD, multiple heatwaves, wildfires and floods have devastated Europe. We are always behind—Europe is not transforming away from unsustainable practices and structures fast enough, nor adapting to the impacts getting more extreme year by year (European Environment Agency, 2023).

We Need Practices of Collective Imagination

Climate scientists have warned about drastic, human-induced changes to the climate since the 1980s. They have uncovered critical insights about the Earth's systems and planetary boundaries (Rockström et al., 2009), natural and social tipping points (Juhola et al., 2022). They have proposed interventions for complex living systems to change course away from unsustainability (Meadows, 1999), sketched out transition frameworks (Geels & Schot, 2007, Irwin 2015), and proposed pathways to more resilient futures (Rogelj et al., 2018). Community organizers have built local resilience networks (Australian Red Cross, n.d.), activists have rallied globally to declare a climate emergency (European Parliament, 2019; Farand, 2019). Policy makers have passed laws to protect biodiversity (European Commission, 2024), and businesses have been shifting linear production systems to circular ones (Baldwin, 2021). But change isn't happening fast enough, and speed of action can only be possible when we know how to act. Focusing only on those practical aspects of change with measurable and quantifiable outcomes, their theories of change have been missing one important aspect: the imagination (Mulgan, 2020; The New Institute, n.d.).

The world is in an ongoing state of polycrisis (Lawrence et al., 2022), an entanglement of crises in multiple global systems, and a “dizzying sense of lurching from one unprecedented event to another, as we wonder

bleakly what new horrors might be around the corner” (Shariatmadari, 2022). Philosophers suggested that “it’s easier to imagine the end of the world than the end of capitalism” (Jameson and Žižek, as cited in Fisher, 2009). But as the writer Ursula Le Guin pointed out, if the “power [of capitalism] seems inescapable. So did once the divine right of kings” (National Book, 2014). As this work will hopefully demonstrate, I too want to challenge Jameson’s assumption, and reframe the question: What do we need in order to imagine living in a repaired, regenerated, thriving world, and what might it take to get there?

Sociologists Bruno Latour and Nikolaj Schultz suggested a need for a “new ecological class” (Latour & Schultz, 2022) focused on protecting life and keeping the Earth habitable. Although the arts, humanities and social sciences have made advancements in giving agency to the non-human, this is not the only strategy needed. They largely missed the opportunity to demonstrate how the experience of humans is changing in the Anthropocene and how humans might break away from destructive practices slowly destroying its own and other species. One key reason for this is that social and political movements have failed to develop unifying cultural tools – new narratives, aesthetics and symbols – that capture the human experience in the Anthropocene. Green politics in Europe have largely overlooked this, failing to connect with people on a larger cultural level, while right-wing movements have successfully used powerful symbolism to rally support. (Schultz, 2023)

The designer, artist and futurist Anab Jain suggested a more-than-human politics – “a new kind of tentacular, multi-kind, multi-species politics of care ... that gives us a new kind of relational agency to help us imagine alternatives for living with and through global warming” (Jain et al., 2019). Being “more-than-human” does not mean to empathize with animals (and neither to stop doing so), but to adopt a non-hierarchical, non-computational view where things don’t happen linearly and systematically, but in growth spurs, similar to the way a plant produces a new leaf every now and then. It is to assume a living organism metaphor of the world, to see humans as interconnected with other parts of nature,

and see ourselves as mycelial underground networks creating many micro-revolutions. (Jain et al., 2019)

We need practices of collective imagination to navigate these unrecognizable times, to create shared understandings of how climate and other, interconnected crises are affecting humans and other parts of nature, to craft visions for change and align people around them, to shape and complement other climate efforts. Futurist Jim Dator observed that future “images often serve as the basis for actions in the present” (2005), sociologist Sheila Jasanoff suggested that imaginaries – our collectively shared visions – shape change (Jasanoff & Kim, 2015), and the sustainability transitions scholar Anna Willow highlighted the need for visions in sustainability transitions (Willow, 2022).

The present thesis works at the intersection of three related fields of practice: Collective Imagination, Experiential Futures, and Sustainability Transitions. It can be approached from any of these fields, provide information, inspiration and build capacity in those fields.

Collective imagination is a multidisciplinary practice of bringing groups or communities together to jointly envision, rehearse and enact possible futures to show a way forward, and provoke the status quo (Thomas Uose, n.d.). It emphasizes interdependence and exploring what collectives can dream and build beyond individual capacities, and they engage with various ways of knowing, including healing, grieving, dreaming, sensing, and embodying. It aims to build the capacity for more people to design, rehearse, and influence future events.

Experiential futures is an approach from futures studies that focuses on creating immersive, tangible experiences of possible futures (Candy, 2010). It is linked to social foresight, a broader capacity of anticipating and shaping futures that involve society as a whole and developing a “futures literacy” (Miller, 2007). This approach combines classic foresight methods and tools (like trends and weak signals analysis) with collaborative art and design practices to address social issues and

challenges. Their goal is to explore radically different futures and question dominant narratives about the future.

Sustainability transitions provide frameworks for actualizing the transformations needed. They refer to the fundamental changes in systems (such as food, healthcare, energy, etc.) designed to fulfill societal needs, towards more sustainable lifestyles. Similarly, transition design (Irwin, 2015) looks at envisioning and creating sustainable futures. Both approaches involve changes at multiple levels (e.g., individual, organizational, societal) and dimensions (social and cultural, technological, environmental) (Markard et al., 2012). Among other things, cultures can shape values and worldviews and mediate transitions between goals and implementation (Häyrynen & Hämeenaho, 2020), provide meaning and narratives (Voices of Culture, 2023), and model sustainable practices.

Together, these imaginative, experiential and practical approaches can help overcome short-term thinking that has so long dominated approaches to eco-social change. As such, they could expand the sense of possibility, and mobilize collective action towards more equitable and sustainable societies.

The goal of this reflective documentation is to demonstrate the potential of collective climate imagination to catalyze climate action through context-specific examples, and to establish collective climate imagination as a core activity in shaping global change. One step to achieve this is to directly address a fundamental challenge in collective climate imagination: how hard it has been to connect and envision life within the climate crisis.

The climate crisis is a challenge at a scale that goes beyond anything that humans have envisioned before, so big that ecologist Timothy Morton called it a “hyperobject” (Morton, 2013). It is a phenomenon so big, it stretches “our ideas of time and space, since [it] far outlast[s] most human time scales, or [it is] massively distributed in terrestrial space and so is unavailable to immediate experience” (Morton, 2013). In the present research project, a frequent topic has been that speculating on extreme

heat in Europe is a naive activity while the Global South has been experiencing deadly heat waves, droughts and floods for a long time. However, this thinking suggests a linear view on the future in Europe as a present somewhere else, not considering those complex, interconnected entanglements.

Many practitioners and communities have used their creativity to craft visions of desirable futures and shape transitions, from “transition towns” (Hopkins, 2008) and citizen assemblies (Bürgerrat Klima, 2021) to the concept of the circular economy (Ellen MacArthur Foundation, 2013). Similarly, “neoliberalism” and “green growth” are imaginaries that shape and uphold a dominant mental model of a social order and change (Bogert et al., 2022), albeit ones that rely on the oppression of marginalized groups, the exploitation of natural systems and human intervention in them, presuming human superiority over other parts of nature. These are hegemonic views – dominant, Western-centered narratives – that the present thesis critically addresses through the practice of “collective imagination.”

Writer and organizer adrienne maree brown uses speculative fiction as a tool for radical, collective imagination, helping activists and organizers to conceptualize and work towards transformative social change. She once said, “I believe all organizing is science fiction. Trying to create a world that we've never experienced and never seen is a science-fictional activity” (Sands, 2015).

Inspiration and Related Work

There are projects of artistic intervention that bring ecological and social issues to life by infiltrating collective imagination. Helping people to imagine what is otherwise difficult and abstract in this way can in turn lead to social and ecological change. These works include climate fiction writers such as Octavia E. Butler, (2012), Ursula K. Le Guin (2011), Richard Powers (2019), Kim Stanley Robinson (2018) and Elvia Wilk (2019), as well as arts and culture makers working with immersive

installations like Superflux's *Mitigation of Shock*, which speculates about what we might eat in 2050 (Superflux, 2017a), more-than-human live-action role play like Furtherfield's *Treaty of Finsbury Park* (Furtherfield & Diehm, 2020), immersive performance like Nesterval's *Der Rosa Winkel*² (Nesterval, 2024), guerilla futures like *Hawaii 2050* (Candy, 2016) and the public space intervention *U.S. Earth Force* (Candy et al., 2020), and community gatherings such as *Stone Soup* (Stone Soup, n.d.).

These works of radical, collective imagination are about bringing people together to challenge the constraints of existing social realities, to envision futures unlike the present. What they creatively express is a struggle for change.

Context

What started out as a real-world frustration for me, and hiding behind it, a feeling of hopelessness and powerlessness, turned into a collective imagination practice. Before starting this PhD research, I had been working in design, strategy, and innovation, often in the field of climate and social change. It felt as if climate work was focusing on very practical, easily implementable solutions and the low hanging fruit. Oftentimes, climate was not considered part of the work at all, as if the creations were made in a vacuum, without a connection to the rest of the material world – the resources it used, the ecosystems it affected – and to social conditions, the work of the humans involved in creating and using them. For instance, a digital, cloud-based service would rarely take into account the energy and water consumed by data centers powering cloud services, the minerals and metals used, and the human labor involved in maintaining data centers, often under challenging conditions (Crawford, 2021). That is to say, in conventional projects, climate and social issues were considered “out of scope.” I did not see it this way. I was frustrated about the tendency to compartmentalize so-called “climate projects” separately from other projects, and be evaluated for its

² German for pink triangle, the Nazi symbol used to mark queer people.

climate impacts (often reduced to mere CO₂ emissions), while other projects would not receive that same judgment. This led to missed opportunities to address the climate and biodiversity crises across a broader range of activities. As neither of the projects had considered the effects of a changing climate, they also failed to account for a shift in future conditions.

In my conversations with my community and peers of creative practitioners, I was frustrated with how images of the climate crisis, and how they would address it in creative, artistic work, too often centered around the idea of the apocalypse. Such dystopian visions were only reducing the complexity of the ongoing climate crisis to a single, major event, they left me feeling helpless and hopeless. Alternatively, the counter-visions among the entrepreneurs around me highlighted naive, technocratic visions of green growth, equally not spurring action.

Meanwhile, high school students worldwide, inspired by the Greta Thunberg, had been holding climate demonstrations every Friday, mobilizing more people to join demonstrations for climate action than anything I had experienced before (Watts, 2019), and calls for systems change to keep global warming under 1.5°C were echoing all climate conversations. Personally, I was missing explicit examples of what systemic change would entail, and what it might mean to live in a 1.5°C hotter world. I found these abstract calls difficult to connect the relevance and urgency of the climate crisis to everyday life and work. In parallel, I observed that friends who had children often changed their views and attitudes; whenever they could, they would turn towards sustainability and even reorient towards more socially and ecologically related work – not because they were now convinced by the climate change arguments, but because the experience of becoming parents realigned their values and worldviews. Similarly, researchers suggest that people change their views not through debate, but through their social circles and experiences (Collins et al., 2021; Lindh et al., 2021).

I was curious if I could provoke a similar shift in worldview: whether people could experience a glimpse of life in the climate crisis – even in an

abstracted, simplified form – and if they might realign their attitudes and behaviors towards more socially and ecologically sustainable lifestyles.

The Starting Point

I began exploring what it might mean to live in a hotter world – first for myself, then with others at creative festivals, sharing my reflections. When I was asked by a European climate innovation organization to facilitate a workshop in futures literacy for climate practitioners across Europe, remotely in the height of pandemic lockdowns in 2020, I reached out to Francesca Desmarais, a former collaborator. Francesca too had been working on climate adaptation and making climate scenarios tangible within her role as the Climate Adaptation Lead at the Copenhagen Institute of Interaction Design (CIID). Together, we considered how to best make climate scenarios understandable and tangible to climate practitioners, in their own contexts of the European cities they were in. How could we launch this effort in creating a collective understanding for what it might mean to live in and with the climate crisis, right where we are, in European cities away from the coast that had barely been experiencing the popularly discussed climate impacts, such as rising sea levels and droughts.

A futures literacy connected to the climate crisis requires a good understanding of climate and social implications, the grounding of imaginations in reality, and necessitates creative constraints. At the time, I was mostly interested in exploring what a 1.5°C change means in the context of a European city like Berlin, where I had been living.

We designed a remote workshop to explore “Shared Socioeconomic Pathways” (O’Neill et al., 2014) – scenario narratives of projected global changes as defined by the Intergovernmental Panel on Climate Change (IPCC) –, and write stories and create characters who could live in those scenarios. Participants described a day in their life, combining climate physics with human inflections. We had divided them into groups for the four scenarios, and we soon noticed that there was a gap in

understanding when people read out the stories to one another. Something was missing, we were only seeing one side of the story. As such, we wanted to create experiences that still focused on the depth that storytelling provides but that also showed multiple futures at once – in a similar way to how the present can be very different for different people living at the same time, in the same place.

After this remote workshop, I started this practice-based research. It was curious to understand how people might make different decisions (in business, politics and daily life) when presented with tangible visions of climate scenarios in their contexts, and if that could accelerate sustainability transitions. In other words, I was interested to know if transitions to sustainability would happen faster if people could experience the slow and seemingly unconnected changes stemming from the many interconnected decisions of people around them. Francesca and I continued joint practical explorations. We developed a context-specific scenario narrative of a European city (Berlin-Neukölln 2039), here staged in Berlin (leading to the first iteration of the experiential intervention HeatCon). In the process that followed, we moved from generic climate scenarios like the SSPs to context-specific scenario narratives focusing on far-reaching social, economic and political implications (see Two Scenario Narratives). We moved through various experiential intervention formats and ultimately centered the work around an annual gathering, for which we switched from the aim to convince people who are undecided about climate action to offering support, inspiration and cultivating imagination with those working in climate adaptation and transformation (see Three Experiential Interventions). We also moved away from working with outcome-oriented organizations and moved to creative practice settings with climate practitioners. This allowed us to follow a more open-ended process without immediately suggesting practical climate solutions and enabled us to organically build a collective working with imagination practices (see Building an Imagination Collective).

Intention

Although I did not set out to work in the arts, based on my design work in climate and social change, I saw its potential for offering an embodied, emotions-based approach to complex problems. In describing my creative process, I aimed to make it understandable to non-creatives and emphasize the relevance of a creative practice. While I have worked with artistic institutions, I never intended for the work to be exhibited in galleries and museums but in public or semi-public spaces and within organizations. This is because I hoped that experiences in context, connecting imaginary worlds to the real world, would give people “tastes of 'pop-up tomorrows” (Hopkins, 2022).

I would like this work to be understood as a source of inspiration, imagination and courage for those working in climate and sustainability transitions. My aim is to comfort the disturbed and disturb the comfortable³ – to offer safer spaces to explore and provide care, encourage imagination, give permission to dream collectively, and learn to ask for what we truly want, not just what we think current conditions allow. To support marginalized communities, I want collective imagination to be easier to practice, catalyzing social and ecological change.

This PhD research was an emerging exploration, grounded in practice and informed by theory, reflections from other practitioners, and speculative fiction. As any creative practice-led approach suggests, inspirations and insights come from diverse sources – sometimes scholarly, sometimes from other practitioners, and sometimes through my own practice. Wherever possible, I cite prior and concurrent work to recognize collective contributions as well as the scenius⁴. My goal is to foster collective climate imagination to explore and guide change toward climate resilience and just transitions.

³ This refers to a quote by Cesar A. Cruz, “Art should comfort the disturbed and disturb the comfortable.”

⁴ The concept of a scenius, the collective intelligence and creativity of a scene or group, as opposed to the idea of individual genius, is accredited to Brian Eno (Kleon, 2014)

Contributions

Artistic and practice-based research makes contributions to knowledge production and understanding through bridging theory and practice, challenging established knowledge, presenting findings in innovative ways, and creating new forms of knowledge (Candy et al., 2021). These can include unique forms of embodied, tacit, and aesthetic knowledge that may not be accessible through traditional research methods. It can produce somatic, procedural, and experiential insights.

I would like this research to contribute to these areas:

1. **Theoretical & Methodological Contributions:** Suggest new metaphors for climate adaptation; offer the "Intention Framework" for designing experiential climate interventions; establish a model for building and organizing imagination collectives and demonstrate how emotions-based, embodied approaches can surface overlooked dimensions of climate action.
2. **Practical Tools & Frameworks:** Two detailed scenario narratives for urban climate resilience, three tested experiential intervention formats, and a living handbook for building imagination collectives.
3. **Process Innovation:** Showcase a seasonal approach to collective imagination work balancing futuring, bringing futures to life, reflection and rest; share structured processes for post-experience reflection and meaning-making, establish principles for trust-building and power-sharing in collective imagination work.
4. **Paradigm Shift:** Reframe collective imagination as essential work to shape change; demonstrate how linking emotional engagement with climate adaptation and action can complement practical initiatives; show how changing metaphors can shift perspectives on barriers and opportunities.
5. **Practical Impact:** Showcase a functioning imagination collective; inspire participants to initiate their own experiential climate scenarios; influence practitioners to establish new climate action initiatives, build a growing imagination community focused on transformative climate adaptation.

Practice-Based Research

My practice-based research takes three forms: scenarios set in the future, present as stories or narratives; experiential interventions ranging from large-scale public posters and pop-up spaces to immersive performances and role-playing, followed by debriefs to process participant's emotions and discuss their experiences; and shaping an imagination collective.

In this approach, participants in experiential interventions were immediately faced with what they imagined the future to become, and oftentimes – if not always – this clashed with their assumptions and visions. Assumptions about futures are something people rarely explore in conventional climate action, activism, sustainability, or climate policy work. Participants were encouraged to discuss their understanding of novel metaphors like a “climate safe haven,” rather than discussing the topic of migration itself, which has become a highly politicized term, often instrumentalized by right-wing parties in Europe (Hutter & Kriesi, 2022). Participants were people who shape climate resilience efforts in their communities and networks – and before they would go on to plan it, together we imagined it.

I conducted practice-based research to explore new practices of imagination, centered around three main research questions: Firstly, how might European cities radically adapt to the climate crisis, and transform? Secondly, how can experiential interventions help climate practitioners to surface emotions about futures, and openly explore perspectives about barriers and opportunities that underlie assumptions about these futures? Finally, how can groups organize the work of collective imagination?

I gathered an imagination collective consisting of creatives and climate practitioners with diverse lived experiences to jointly shape visions. For the interventions, we invited more people related to climate, adaptation and transformations to embody those futures and question assumptions together. In this PhD research, I individually initiated this work,

conceptualized the practice-based research studies, and reflected on collective practice.

Reflective Learning and Sense-Making

I used auto-ethnographic methods (Sparkes, 2002) to reflect on my research and produce reflective learnings. Given that these processes are highly context specific, and creative practices depend on personal and collective preferences, consider this work as one possible way to approach collective climate imagination and answer the questions I posed.

Structure of This Reflexive Documentation

I will begin by exploring how European cities could radically adapt and transform to the climate crisis. I will introduce two Scenario Narratives that both examine the concept of climate resilience but each manifest in different ways. In the second section, I will look at how experiential climate scenarios can help climate practitioners surface emotions about futures and openly explore perspectives about barriers and opportunities that underlie assumptions about those futures. I will introduce three place-based Experiential Interventions that explore different formats of engagement. I will then address how to organize the work of collective imagination. In the last section, I will introduce building an Imagination Collective for transformative climate adaptation. I aim to demonstrate that collective imagination can catalyze climate action. Throughout this reflexive documentation, I interlace descriptions of the “thesis” (my artistic body of work) with observations and auto-ethnographic reflections. Additional autobiographical and autofictional elements are indicated in blue, while fictional components—representing the thesis—are distinguished using various colors.

HOW THIS WORK WAS MADE

This practice-led research was grounded by questions and design-led processes. It uses reflective learning to synthesize insights and concludes with an actionable framework for imagining collectively.

This work was informed and inspired by reflections on my own creative practice, exploring climate and sustainability both in a business and artistic context. These reflections raised questions about relationships with nature, climate, and systemic change. Through experiments, research, reading fiction and theory, and ongoing conversations with people from different fields – particularly a previous collaborator who later became central to the research project – I began to reframe these questions and approach them through a series of small experiments.

What followed was a practice-led inquiry focused on extreme heat, adaptation, and transformation. Decision-making, immersion, and collective imagination became central to the process of combining creative practice with climate and social science, politics, and business, and translating my conclusions into actionable strategies. The practical work became collaborative by necessity, because collaborative work can support more diverse collective imaginations.

To make sense of this practice-based work, I used auto-ethnography, an approach creative practitioners and researchers such as Frida Kahlo (Piechura, 2021), Audre Lorde (Burkhard, 2020), Gloria Anzaldúa (Rose, 2023) and Maggie Nelson (McCarthy, 2023) have used to examine personal experiences within larger cultural and theoretical frameworks. This included reflective writing (based on written journaling and photos)

and collaborative reflections with participants and collaborators. These reflections and writings are informed in and inspired by theory.

This work is context-specific, shaped by my personal journey, environment, and past experiences. It reflects both my personal path but also the collective reflections and decisions of the team involved.

This is also an attempt to make our values transparent, because our experiences and values directly shape the decisions we make. Making this work felt vulnerable. To suggest another vision is to make yourself vulnerable – it is to share your fears, hopes and dreams – and to be open to critique, especially to welcome marginalized perspectives into discussions on intersectionality. And, as much as I forget about it, it also allows others to reach out and share their support, and find one another.

I am very proud of the collective work my participants, collaborators and I have done over the last four and a half years, shaping a collective process rooted in design and imagination towards transformative climate adaptation. Yet, I hope that this work soon becomes outdated because this would mean that the collective efforts have moved forward.

DESIGN RESEARCH QUESTIONS

The three questions I explore in this practice-based research are:

RQ1

How might European cities radically adapt to the climate crisis, and transform?

RQ2

How can experiential interventions help climate practitioners to

- A. surface emotions about futures, and
- B. openly explore perspectives about barriers and opportunities that underlie assumptions about these futures?

RQ3

How can groups organize the work of collective imagination?

APPROACH AND PROCESS

In this section I describe my overall approach through practice-based research, and the seasonal approach to research.

Overall Approach

RQ1: Scenario Narratives



RQ2: Experiential Interventions



RQ3: Imagination Collective



I followed a practice-based action research approach. In practice-based research (Candy et al., 2021; Skains, 2018), new knowledge is created through the interdependent, complementary processes of research and practice, and the deliverable itself constitutes new knowledge that needs to be reflected upon (Mäkelä, 2005). The rigor of this research comes from an exhaustive and holistic creative exploration. The validity of a chosen creative method arises from the delivered research solution

(Spencer, 2009). Action research (Lewin, 1946) seeks transformative change in a simultaneous process of taking action and doing research whilst critically reflecting on the two.

My creative practice was crafting scenario narratives and experiential interventions, and building an imagination collective to shape the conditions for collective imagining for transformative climate adaptation, and reflecting on them through auto-ethnographic methods (Sparkes, 2002)

In order to create these scenario narratives and experiential interventions, I followed an iterative methodological approach that I later describe as “Seasons”, consisting of research for and through design (Sanders, 2008). Earlier stages informed subsequent ones, each had its own synthesis and reflection phase, and they were brought together in a final reflection in order to create the final conclusion. For most parts of the process, I invited other practitioners as collaborators. Initially, those practitioners joined me for very specific activities, while I remained the lead organizer. As it became apparent throughout the research that processes aiming at collective imagination would benefit from specific other perspectives, I sought out collaborators who could bring in those perspectives. This also meant seeking out collective organizing processes that would allow all our perspectives to be equally heard and decisions be taken collectively, thus practicing flexible hierarchies. I then saw my role as a process facilitator, not as a creative director.

Seasons

I approached my research as a living process, flowing with the natural seasons and collaborating with others within the climate “ecosystem” – starting by futuring a scenario narrative and sewing our seeds (spring), growing projects and harvesting results (summer and fall), and reflecting, resting and recovering (winter). Similar cyclical approaches can be found in both creative practice (Cameron, 2002; Gilbert, 2015) action research (Lewin, 1946).

After an initial set-up phase with small experiments and first collaborations, I conducted the seasonal approach twice. This included futuring a new scenario narrative and creating experiential interventions. Each of the projects within the seasons had its own iterative process.

The Seasons are strongly linked to the narratives developed, and had their own methodology. I thus also consider the narratives as story seasons themselves, a group of projects that were produced within a given time period. See [Seasonal Approach](#) for details.



TWO SCENARIO NARRATIVES

In this chapter, I describe my exploration on how European cities might radically adapt to the climate crisis, and transform (research question 1). This has resulted in two approaches to futuring and writing scenario narratives. Firstly, Berlin-Neukölln 2039 is based in science-fiction prototyping, and led to a speculative written transformation report. Secondly, Resilience Beyond The Current View is based in a scenario learning journey approach that leads to a narrative for an immersive performance structure.

I developed both scenarios because I had questions that I did not find answers for otherwise. First, what might life look like with 1.5°C (or more) of warming in a city like Berlin? Second, what might it take to radically transform social, political, and economic structures to transform away from ecological destruction and social injustice? The first scenario focuses on immediate climate adaptation and resilience – emergency response, changes to the built environment, and care – but it soon felt outdated. This is not because the challenges and transformations it suggested were not relevant any more – they still are at the time of writing this – but rather because it did not go far enough. The second scenario, two years later, tried to fill in those gaps and answer the more challenging questions about structural changes, taking a more transformative approach. In both cases, I focused on the depth of scenarios and what it would feel like to exist in those worlds, in as much specific and textured detail as possible, including its emotional aspects.



Berlin-Neukölln 2039

Scenario narrative exploring resilience as mobilizing social institutions, changes to the urban environment and care practices.



Resilience Beyond the Current View

Scenario narrative exploring resilience as community-led healthcare, retraining for post-growth activities, decarbonization marathon, climate safe havens, balancing abundance.

Summer 2015, a beautiful July weekend. My family came to visit me in Munich for my graduation. My father and my grandmother had driven over nine hours to see me receive my diploma. I booked an Airbnb for them only a five-minute walk from my apartment. I picked up the key the morning of their arrival, it was certainly over 30°C that day. When they arrived, they were sweaty and exhausted from the trip – especially my seventy-something-year-old grandmother – she assured us she would never drive such a far distance in her life again.

As we drove onto the tiny parking lot in front of the house, we had to maneuver around a black van. Schlepping their suitcases, I led my family up in the apartment building, which now, in the late afternoon, had begun to smell. We finally arrived on the 2nd floor, and I turned left into the hallway, at the end of which the apartment was, when my father suggested we should go to a supermarket first; he needed a cold drink. I got frustrated – I had just carried my grandmother's suitcases up four flights of stairs – but I reminded myself that they had just driven for nine hours *for me*, and I agreed. We walked down and over to the supermarket around the corner when my father pulled me aside. “Did you see the black van in the parking lot?” he asked. “Yes...?” I responded, not clear what he was getting at. “It was a hearse.” A car to transport a dead body. Somebody must have died in that apartment building, and my father didn't want my grandmother to see.

We passed as much time as one possibly could buying three cold drinks in a corner store before we went back. The hearse was gone by this time. As we made our way up the stairs, the stench in the building was hard to bear. The heat of the previous couple of days must have contributed to the dead body decomposing faster – who knows how long it had been in there. As I made my way into the hallway at the end of which the Airbnb was, I saw an open door opposite ours. It was clear the smell was coming from there, even though the body must have been taken away by now. I caught sight of a paramedics' backpack by the door – I didn't see more, I could not stand looking inside, though I also could not look away entirely.

What I imagine happened next comes from the book *Heat Wave: A Social Autopsy of Disaster in Chicago* (Klinenberg, 2015). In my head, I imagine the paramedics noting down the time of death, briefly describing the surroundings, the smell. As the body is brought in for an autopsy, the examiner finds the physical cause of death connected to a specific organ failure – maybe the kidney – but not the heat itself. If there is a funeral, family might show up and wonder, When were we in touch last? Was it two days, two weeks, two years?

Summer 2039. It has been 10 years since the deadly heat waves of 2029, when thousands of people were hospitalized, schools and jobs were closed for months, and frequent electrical blackouts occurred all across Europe.

Berlin is about to be hit by another week-long heatwave, with temperatures to rise up to 46°C, again. Cooling centers in former malls and pop-up tents in parks are the only refuge for many residents. People come to cool off, hang out, work, sleep, and get medical assistance in emergencies, assisted by volunteer heat responders and experts, many of whom have come from southern countries to Berlin for this heatwave.



Berlin-Neukölln 2039

Spring 2021, updated in summer 2022

Neue Gesellschaft für Bildende Kunst

Project Team: Juli Sikorska (2021-2022), Francesca Desmarais (2021),
supported by Janna Jung-Irrgang (2022)

Context

This scenario narrative was created as part of an art project I pitched to neue Gesellschaft für Bildende Kunst (nGbK) to explore future effects of extreme heat in the Berlin district Neukölln, around the neighborhood Schillerkiez and the subway station Leinestraße in particular. nGbK were looking to explore how that particular area was changing respectively to humans and vegetation, especially as there had been significant urban changes that ranged from gentrification to cemeteries being transformed into parks. I pitched this in 2020, before local climate impacts and heatwaves in particular were part of collective consciousness in Germany. Only weeks before the project based on this scenario opened to the public, in the summer of 2021, a flood devastated the Ahr valley in Germany.⁵

The scenario developed in this project later served as the basis for the experiential climate scenario Climate Futuring Weekend as well as the urban interventions Urban Heat Island Living: Berlin-Neukölln and Cooling Center (2022-2023).

Intention

I felt as if I didn't truly understand what a 1.5°C warming meant – especially not for me personally, living in central European cities such as Munich and Berlin. I understood the climate crisis on an abstract level, and that was enough for me to become active in the climate space. However, in conversations with friends, coworkers, and project partners, I was noticing how different people's relationships to the crisis were. Particularly, how impersonal and unemotional the climate crisis was to those of us socialized in the Global North, compared to crises that had more clearly visible consequences on people around in present times. Meanwhile, the climate crisis seemed as if it wasn't affecting people, as if

⁵ This scenario narrative can also be found in Juan & Meiffert, 2022 in the chapter by Sikorska, 2022.

it wasn't here and now, and as if there was a binary choice between a green corporate utopia or an apocalyptic dystopia. However, very little of the messaging I had seen was showing anything in between or anything specific to cities in Europe. Aiming to understand how my own everyday life might change in the future, in this scenario I explored the most direct impact of the climate crisis in Berlin that would also cause the most visceral experience on a body: extreme heat.

Background

In August 2003, Western Europe experienced a heatwave as long and intense as never before, in areas never impacted before. It led to unprecedented health crises and excess deaths (Kosatsky, 2005). The situation was particularly severe in France where, for over a week in August, the temperature remained around 37°C in some areas. Elderly and chronically ill people or those isolated from support were particularly susceptible to the heat; alpine glaciers shrank by 10% over the summer, forest fires raged across western Europe, harvests declined, and high water temperatures and low water levels shut down nuclear power plants in France. This was all happening at a time when the need for electricity was the highest ("Heatwave Hits French Power Production," 2003; The Editors of Encyclopedia Britannica, 2024). Calculations ranged up to 72000 deaths in Europe, making it the deadliest heat wave worldwide between 2000-2019 (United Nations Office for Disaster Risk Reduction, 2020).

European cities away from coasts do not experience the rising sea levels that have long been connected to climate change. However, they are experiencing climate impacts such as heavy rainfall and floods, droughts and extreme heat. It has been reported that north European cities in particular are "dangerously under prepared [...] for the consequences of climate change" (Lizana et al., 2023). For a long time, however, people had not linked heatwaves as effectively to climate change as floods, but this effect only happened when it was not explained what they meant and what implications had on humans. Once this was explained, the link

between heatwaves and climate was clear. This also has to do with the fact that unlike other extremes such as floods and storms, heat is largely invisible and many of those affected experience its impact indoors, away from public view (Johnstone-Hack, 2024).

There are two ways European cities are experiencing extreme heat: heatwaves and urban heat islands (UHIs). Heatwaves are extreme weather events, they are periods of abnormally high temperatures when compared to average temperatures (World Meteorological Organization, 2023). Heatwaves amplify many risks, influence the health of humans and other parts of ecosystems, and harm infrastructure (Deutscher Wetterdienst, n.d.). Though temperatures are highest in the summer, winter heatwaves destabilize ecosystems (Gomes et al., 2024). With the climate crisis, extreme heat events are becoming more frequent and more intense (IPCC, 2023)

Urban heat islands are pockets of the city that are warmer than their surroundings. They form “when cities replace natural land cover with dense concentrations of pavement, buildings, and other surfaces that absorb and retain heat” (US EPA, 2015). UHIs accumulate heat depending on various factors – weather conditions, the city’s geophysical characteristics, heat from buildings, vehicles, and inhabitants – and store it in buildings and streets. This makes cities hotter than suburban or rural areas, and also creates heat islands within a city so specific to individual locations that they resemble an urban heat island archipelago (Farías et al., 2020). Two nearby streets can feel very different – green and blue spaces (parks, rivers) are cooler, while streets and buildings are hotter, even if the two are in very close proximity from one another. As heat accumulates in built structures during the day, they only slowly give that heat away at night – which is also why urban heat islands are strongest at night. Nighttime is when bodies regenerate and need cooler temperatures to do so. A night above 20°C is considered a tropical night, in those conditions it is harder for bodies to regenerate. The urban heat island effect intensifies during heatwaves and leads to health-related problems (IPCC, 2014).

This also applies to Berlin, an urban heat archipelago already experiencing more and longer heatwaves, including tropical nights. By 2100, Berlin is expected to have the climate of present-day Toulouse (Reusswig et al., 2016). This in turn leads to public health issues, stress on food systems – droughts, food scarcity, change of locally grown varieties, food availability and pricing – as well as disruptions in work and private life. Current attempts to adapt are focusing on individual challenges of the city, but with climate impacts becoming more and more extreme, soon an entire city will become a climate adaptation challenge (Senate Department for Urban Mobility, Transport, Climate Action and the Environment, 2021).

Question

What might life with the climate crisis in Berlin look like in the near future (2030-2050-2070), and how might people adapt?

Process

After conceptualizing the project, I invited Francesca to jointly build a world.⁶ At the time, we didn't yet know it would become a scenario

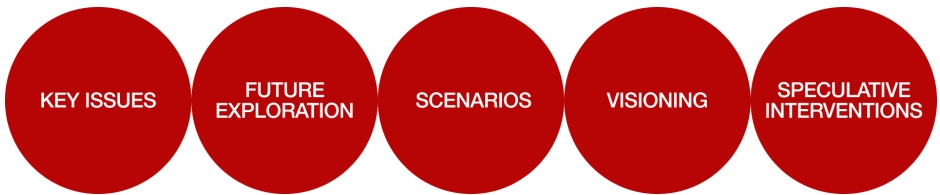
⁶ Francesca and I had previously (collaboratively and independently) conducted climate futuring workshops. In our last joint workshop, we had used Shared Socioeconomic Pathways (SSPs) (O'Neill et al., 2014, 2017) as scenarios looking at challenges to climate mitigation and adaptation, supported by past events as signals of change that we selected for each scenario. We divided the participants into groups and assigned each group a scenario. In a 90 minute process, participants extrapolated the signals on the backdrop of their scenario, to develop a character and a brief story. They followed the "Science Fiction Prototyping" method (Johnson, 2009, 2011) of applying the science and building the world, followed by a scientific inflection point, impacts on people and nature, and a human inflection point, to finally see what can be learned. As groups worked on individual scenarios (e.g. high challenges to mitigation and high challenges to adaptation), that workshop has left us feeling that they developed

narrative. Inspired by the art-science project *Radical Ocean Futures* (Merrie et al., 2018), the seminars in *Transition Design* (Carnegie Mellon University, n.d.) and *Global Integration Project* (Copernicus Institute of Sustainable Development, 2021), we followed an intuitive, exploratory process loosely based on the “Science Fiction Prototyping” method (Johnson, 2009, 2011), “Systems Thinking” (Meadows, 1999; Williams et al., 2017), “Sustainability Transitions” (Feola, 2015; Schot & Kanger, 2018), visioning and mapping pathways to those futures (Bai et al., 2016; Pereira et al., 2018).

This process that was leading to the scenario narrative is heavily intertwined with the urban intervention Urban Heat Island Living: Berlin-Neukölln that brought the scenario to life. Wherever possible, I try to separately describe parts of the process that informed the scenario, and those parts that informed the urban intervention, however the real process was not as clean cut as it may appear from the description.

a one-sided idea of climate futures, and the stories were superficial (which can also be due to the brevity of the activity). Moreover, we wanted to work with scenarios more specific to the issues that participants related to – all of them were climate professionals in Europe. We had suggested this to our project partner, however, making a custom scenario was out of scope for this brief project. Francesca and I were looking for a context-specific scenario from European cities, yet somewhat universally applicable. As it would take time and effort to develop, we were hoping to create something we could apply across multiple European geographies, communities and organizations. This was our initial motivation for developing this scenario together. When my pitch was accepted by nGbK, it was the perfect invitation for Francesca and I to start working together. (Those invitations would later become a pattern – every time there was a specific project or outcome to work towards, it was an opportunity to gather collaborators.)

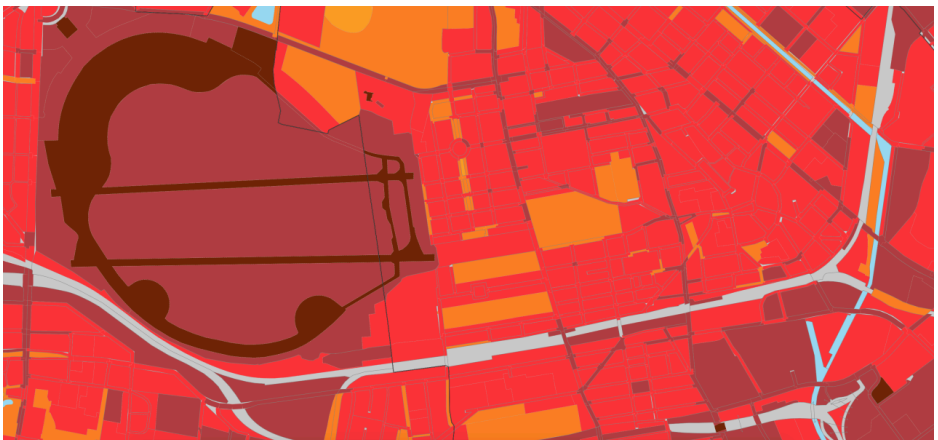
Process Overview



Key issues in Berlin-Neukölln

To make the scenario rooted in local context and geography in the Berlin district Neukölln and around Leinestrasse in particular, I started by exploring key climate and social issues in and around the subway station Leinestraße.

To understand how extreme heat – mostly heat islands – are affecting Berlin-Neukölln, I looked at heat maps showing daytime and nighttime temperature extremes as well as climate zone maps. One of the biggest heat islands is Tempelhofer Feld, the former airport-turned-park at the West border of Neukölln. During a measurement on a hot day in 2014, the tarmac on former landing strips has heated up to over 35°C. Unlike other heat islands that store heat in buildings and retain higher temperatures at night, Tempelhofer Feld would cool down the most,



forming a cooling sink.⁷ (Senatsverwaltung für Stadtentwicklung und Umwelt, 2015)

To connect this to social issues in and around the subway stop Leinestrasse, I gathered my own observations from living there at the time. I identified six social tensions: multicultural populations, gentrification, a recent change in rental laws, political uncertainty from nearing local and federal election, year-long effects of the Covid-pandemic and continuously high incidence rates, and the visible use of opioids in and around the subway station. Francesca and I discussed them to create a shared understanding, especially as Francesca was not familiar with the local context.

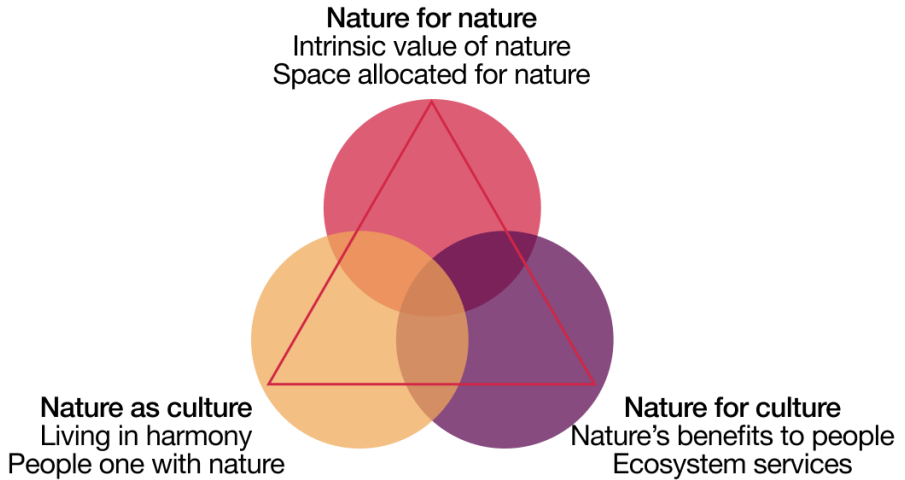
1. Future exploration

To prepare for developing future scenarios and stretch our thinking, we conducted a future exploration in three steps: exploring the relationships between nature and culture, describing a day in the life in this world, and defining key current uncertainties. To help ourselves get started, we imagined a random time in a particular future: “It’s June 26th 2051, we’ve just come out of the 3rd heatwave this year.” We let ourselves gather all ideas first, whether they fit with the question and setting or not, and to select the interesting ones later. Many of these ideas are already everyday life in other parts of the world, however, the purpose of this activity for us was to imagine them in a European city such as Berlin.

Exploring relationships humans have with nature. In their Nature Futures Framework (NFF), (Pereira et al., 2020) describe three extremes of the relationships that humans have with nature. We ideated how a city might see itself under the three extremes:

⁷ At the time of research, the only available data was from 2014. At the time of writing, there is a live heat map for Berlin (meteoblue, n.d.)

Nature Futures Framework (based on Pereira et al., 2020)



- a) **Nature for society:** Nature's benefits are to serve society (e.g. as ecosystems services). Here, we imagined urban nature being measured and managed, such as the monetary value of a park, a river, an edible garden, or an aloe vera plant, a bee, a rat, mold. Speculating, this could imply a green space tax paid for areas with more green space, apartments near wind corridors are rented at 25% premium, trees being cared for only as long as they provide enough cooling and carbon sequestration, and cutting them down once they don't.
- b) **Nature for nature:** Nature has an intrinsic value in itself, and space being allocated for nature. Here, we imagined clear boundaries between nature and infrastructure. For instance, demolishing urban spaces to make space for more urban nature, building waterways for floodwater in the city, locking parks and parts of urban nature for certain times to let nature be on its own. Speculating, this could lead to people breaking those rules to enjoy a quiet or special location.
- c) **Nature as culture:** Living with harmony, where people are one with nature. Here, we imagined integrating "nature" and infrastructure throughout the city. We imagined Berlin's history being rewritten to include the evolution of urban flora and fauna,

seasonal celebrations – such as summer and winter solstices – and citizen brigades taking care of species that are struggling or only spend certain parts of the year in the city such as winters, when the city is warmer than its surroundings.

Ideas and questions that fit in neither category, but were nevertheless interesting, included (cooler) suburbs becoming more expensive than (hotter) densely built city centers, and wealthy Berliners moving out to the suburbs, reversing current rental price developments.

A day in the life. We imagined the meteorological course of a particularly hot day in Berlin, when daytime temperatures between 11am and 8pm exceed 40°C, and multiple characters in our brief story: a gallery worker, a writer, a cleaner and a tourist. We played out the course of the day from waking up until going to sleep. Ideas included two separate working periods during the day with a break during peak heat and optimizing working days for peak brain time; seeking out air-conditioned spaces during peak heat times; shifting social times and plant care routines to late at night; making extra considerations to keep children and elderly people safe from heat such as sufficient sunscreen; water and shade and checking in on them during extremes; as well as shifting social class dynamics with those working in low-physical effort jobs and living in greener spaces and outside of the city being having more social capital in extreme heat.

Uncertainties. Based on the tensions found earlier, in a reflective discussion we identified three key uncertainties relevant for our scenario in Berlin, and their possible extremes. These “extremes” of an uncertainty are not intended as mutually exclusive categories, like they might in a classical scenario process. Instead, we used them loosely in the creative process to inspire our thinking in different directions:

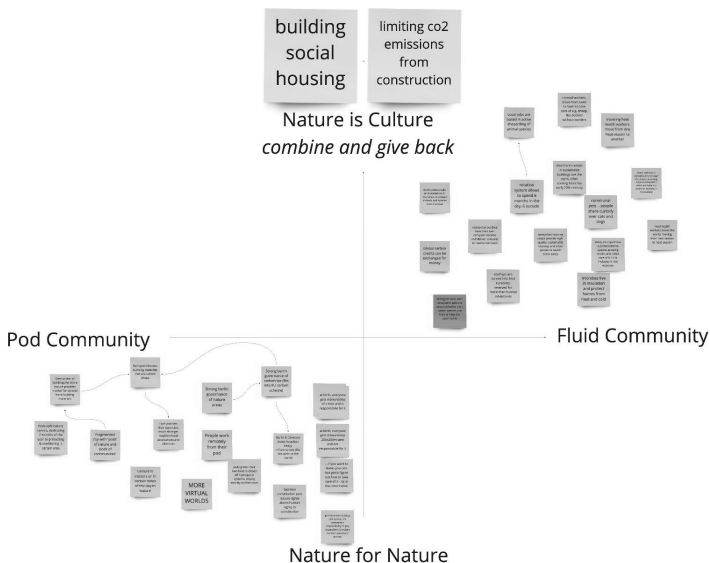
- **Housing construction:** Massively extending (social) housing vs. abrupt construction stop to avoid CO₂ emissions from new construction.
- **Progressive city politics:** Socialist-communist vs. (neo)liberal.

- **Creative and innovation capital:** Technocratic innovation led by startups vs. social innovation led by artists.

Further uncertainties we considered were **communities** (inclusive, fluid communities vs. exclusive pod communities), **individual identities** (fixed vs. fluid) and **electrification** (no-electricity vs. full electrification). We had also considered urban growth in Berlin, housing scarcity and regulation, coping with homelessness and drug addiction, and local adaptation to climate change.

2. Scenarios

Continuing a creative exploration loosely following a scenario process, we mapped future scenarios with 2x2x2 matrices: In each scenario matrix, we used a key uncertainty, one of the other uncertainties, as well as two extremes from the Nature Futures Framework (Pereira et al., 2020). In order to explore radically different directions, we explored two (mostly opposite) quadrants of each matrix. We then selected the most exciting ideas out of all quadrants and merged them into a vision in the next step.



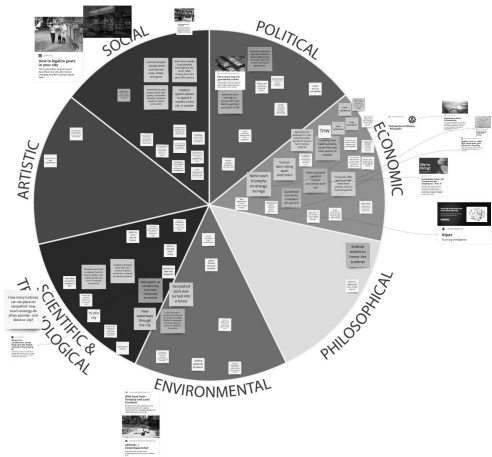
Grounding in ongoing Berlin-based initiatives and imaginations.

Prior to this process, I participated in a remote workshop gathering the ideas of people who live in Berlin on how we might want to live in 2030, using the Three Horizons framework. The workshop was facilitated by Donut Berlin, held in order to inform the city's smart city strategy. I used this workshop to ground myself in the local context and to understand what projects are already imagined and underway, as well as inspiration. I contributed some ideas into the workshop, and I carried some of the ideas into the next step – such as the climate citizen assembly that was underway in Germany served as inspiration for the first participatory scenario workshop.

3. Visioning, Worldbuilding & Timeline

To build a multi-dimensional world, we went both for balance through breadth as well as the development over time.

Balancing the world. We took the ideas most surprising and interesting to us from all scenario matrices. To build a well-balanced world, we placed them under the categories social, political, economic, philosophical, environmental, scientific & technological and artistic, following the *Seven Foundations* framework (Zaidi, 2017). We ideated additionally



on philosophical and artistic aspects of the world as they were initially underdeveloped. We looked for real world examples of the ideas in our imaginary world as seeds of change, inspired by the *Seeds of a Good Anthropocene* (Bennett et al., 2016). Those examples included a real guide on how to legalize goats in a city⁸ as a seed for (communal) animal

⁸ <https://grist.org/food/how-to-legalize-goats-in-your-city/>

herding in the city, as well as funding given to a Berlin-based carbon accounting startup⁹ as a seed for the city becoming the capital of carbon accounting startups.

At the end of this step, we saw three main challenges: **urban adaptation to extreme heat**, **providing housing while keeping carbon emissions low**, and **supporting low-income and vulnerable populations** such as artists, social and health workers, (home) care workers and gig workers. Based on these, we selected three main ideas – seeds of our imaginary world – to develop the depth of the world: **traveling heat health workers**, **Berlin becoming the capital of carbon accounting startups**, and a **guaranteed income for caretakers of all species**. These would provide the basis for developing interventions in the next step. Additionally, we added urban nature infrastructure such as wind corridors and waterways, neighborhood nature watches, as well as solstice events to honor the beginning of summer and other seasons.

Development over time. From that vision of a world, we worked backwards to the present time, and placed the ideas on a timeline based on how soon we imagined them happening. For example, traveling heat workers responding to extreme heat emergencies first, a guaranteed income for caretakers of all species last, as well as which ideas may be a prerequisite for others. Methodically, this was speculation, and although we gave this speculative scenario an imaginary year, that only served for reference, rather than aiming to be a correct estimate.

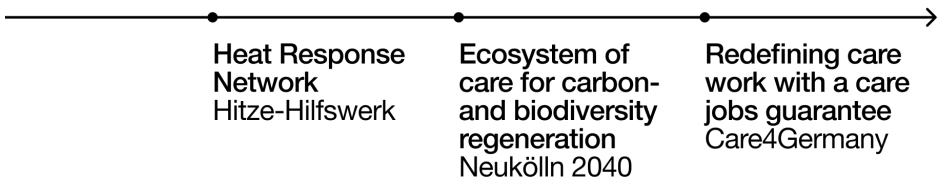
4. Future interventions and events

To continue deepening the scenario, we speculated on the interventions that might be necessary to respond to extreme heat, and what events might cause and facilitate those interventions. We tied it all together in a scenario narrative.

⁹ <https://plana.earth/academy/plan-a-raises-funding-help-companies-reduce-carbon-footprint>

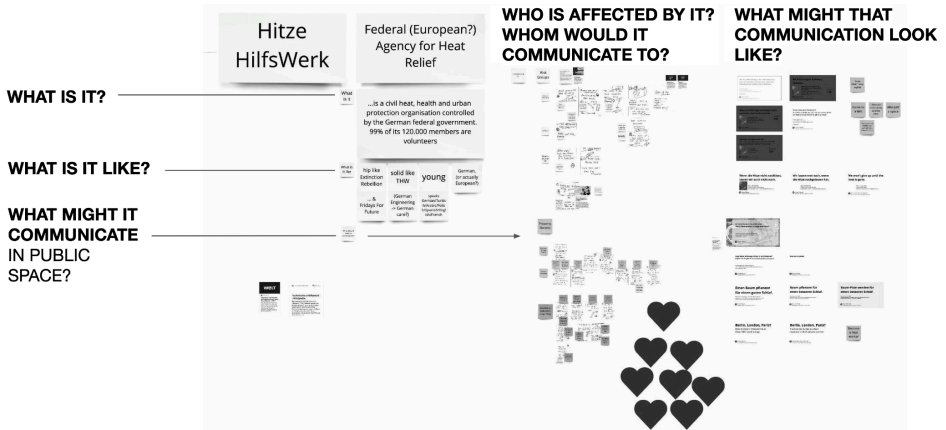
Future interventions. We took the three seeds of our imaginary world that resonated with us most, and developed them further into interventions we could imagine happening in that world – a **heat response network**, an **ecosystem of support for carbon – and biodiversity regeneration**, and **redefining care work through a public jobs guarantee**. Placing the interventions on a timeline allowed to show the development over time. To give these interventions a “body”, we imagined three organizations coming from different fields of social change. For each of the organizations, we researched what present-day signals point in that direction and the difficulties they might face.

Time



I then took the three ideas for organizations and developed them further into speculative organizations (also with a focus on brand and communication design, as this is how this scenario would come to life in Urban Heat Island Living: Berlin-Neukölln). Conducting desk research and ideating, I focused on questions such as: What is this organization? What is it like? What might it communicate in public? Who might be affected by it, and whom would it communicate to? What might that communication look like? What is the main provocation from this speculative organization – the provocative question to ask in the present that would shed light on something surprising about the scenario that may not be considered in a city like Berlin today?

Example: Responding to extreme heat – Heat Response Network



Desk research on aid in extreme heat revealed that official cooling centers already existed across North American cities such as Toronto (Global News, 2012) and New York (City of New York, n.d.), but that cooling centers were rarely used as such (Kaminer, 2010).¹⁰ Moreover, heatwaves have historically been downplayed. Heat deaths have rarely been recorded, local governments have failed to follow through existing plans to call out emergencies, and vulnerable populations in neighborhoods without much social cohesion are at the highest risk of dying alone in the heat (Klinenberg, 2015).

Inspired by the *Bundesanstalt Technisches Hilfswerk (THW)* – Germany's Federal Agency for Technical Relief – I imagined the *Hitze-Hilfswerk (HHW)* – Germany's Federal Heat Response Agency – as a civil heat, health and urban protection organization supported by the German federal government, in which 99% of its 120,000 members are volunteers. (I describe the development of the visual brand and messaging under Urban Heat Island Living: Berlin-Neukölln)

¹⁰ After this project was finished, the (Technologiestiftung Berlin & CityLab Berlin, 2021) published a map with air-conditioned or otherwise cool locations. In 2022 in Vienna, the Red Cross opened the first cooling center (Vogt, 2022). An investigation by a group of journalists revealed how poorly Germany was prepared to respond to extreme heat (Biermann et al., 2022).

The main provocation here was: What if we had a collective, system-level response to heat stress that we all might be vulnerable to?

The other provocations were centered around:

- **Shaping the social & ecological transformation – Neukölln 2040:** What if cities like Berlin actively shaped the social and ecological transition and prioritized funding, infrastructure and support for those driving the change towards becoming planet-positive?
- **Re-defining care work – Care4Germany:** What if we approached care work seriously on a system-level – care for humans of all walks of life and other forms of life, but also care for electronics and infrastructure? What if every resident had a right to well-paid, meaningful work within the social-ecological transition, and enough time to follow one's other goals? What if we prioritized building resilience, investing in a new wellbeing economy, over responding to crises with huge relief bills to support a fossil-fuel economy?

In parallel to the scenario, I developed communication messages. Together with a visual designer, we transformed them into posters and developed brands for the three organizations (see Urban Heat Island Living: Berlin-Neukölln)

Future events. Francesca wrote flash fiction in the form of brief future articles from our imaginary world. It included headlines and brief teasers for articles, supported by quickly photoshopped images. As we were already planning the Climate Futuring Weekend, we knew it would be a fast and scrappy, generative workshop, and so the quickly photoshopped images reflected that. These events in the form of future headlines provided context to the world outside the organizations, and later went into the final artifact, the Berlin-Neukölln 2039 Transformation Report.

Narrative. To describe the development over time, I wrote brief scenario narratives. Initially, narrative part I set the scene and described the direct climate impacts, such as the consequences of extreme heat, and an immediate response related to *Hitze-Hilfswerk*:

Summer 2039. It has been 10 years since the deadly heat waves of 2029 that caused mass hospitalizations and power outages across Europe. Berlin is about to be hit by another week-long heatwave, with temperatures to rise up to 46°C – the hottest one since early May. Cooling centers in former office buildings and pop-up tents in parks are the only refuge for many Berliners. People come to cool off, hang out, work, sleep, and get medical assistance in emergencies, assisted by volunteers and expert heat responders who have come from southern countries to Berlin for this heatwave.

Narrative part II showed the longer-term changes on the level of a city that it would take to radically adapt:

Berlin has become the global capital of wellbeing, carbon and biodiversity innovation, and is on the path to offer every resident a living-wage job within the ongoing socio-ecological transformation, now well visible in Neukölln. Among the biggest accomplishments are shaded streets filled with movable, drought-resistant trees and succulents, taken care of by neighbor watering groups who organize over messenger groups, and the newly constructed ventilation tunnels and waterways. But the rewilding of Tempelhofer Forst has been the biggest success yet. Over the last 10 years, it has developed into the most biodiverse area of Berlin, and it has seen the most exciting summer and winter solstice festivals in Europe.

As we worked with the scenario, we split part II into two parts and connected them with the latter two interventions, *Neukölln 2040* and *Care4Germany*, as shown in the final scenario narrative: Berlin Neukölln Transformation Report 2039.

Continued development. The initial scenario served as a basis for the urban intervention Urban Heat Island Living: Berlin-Neukölln that led to three brands for the organizations and communication artifacts in the form of large-scale posters that were placed in Berlin in the summer of 2021.

It was also the basis for the immersive ecosystems intervention Climate Futuring Weekend. As my collaborators and I iterated and developed it further into the Heat Resilient Cities Conference, we reflected on the shortcomings of the initial scenario and added speculative events to the Transformation Report.

Outcomes

Berlin-Neukölln 2039 is a scenario narrative staged in a not-too-distant future, when heat waves have become even more frequent and intense, with noticeable consequences for the entire population. It is neither a prediction nor a desired development, but a possible way to look at what climate adaptation and mitigation might look like in Neukölln if addressed at systems-level for all its residents.

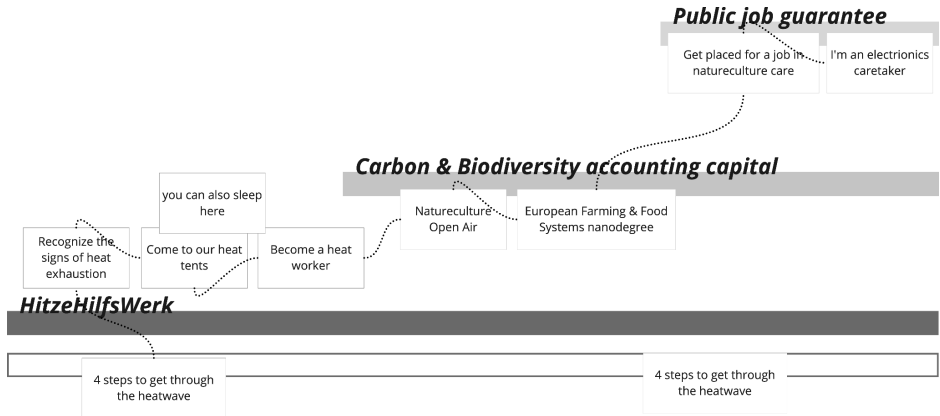
Beyond the impending heat stress, Berlin in 2021 is dealing with an ever-growing urban population, unemployment and homelessness. But it is also world-famous for its creatives, social innovators, startups and progressive city politics. The scenario is a thought experiment in an attempt to build urban resilience to a silent threat that is already affecting many lives. This is a kind of resilience that could potentially save many lives and create more just, convivial and sustainable livelihoods. It is also an attempt to move from reactive to proactive action; shaping the socio-ecological transformation from the ground up, and how it could be met top-down from the government.

This creative scenario development process produced a scenario timeline in three phases, three speculative organizations, as well as a transformation report as a speculative artifact from our imaginary world. I

later modified the transformation report into a pre-recorded and live newscast.

Three-phase scenario timeline

The timeline showed the scenario development over time. It was divided in three phases matching the interventions. Firstly, immediate heat response with the organization and events around *Hitze-Hilfswerk*. Secondly, how a city like Berlin might actively shape the social and ecological transition with *Neukölln 2040*. And finally, what it could look like to approach care work seriously on a system-level with *Care4Germany*.



Three speculative organizations

Hitze-Hilfswerk, Germany's Federal Heat Response Agency, is a civil heat, health and urban protection organization supported by the German federal government. 99% of its 120000 members are volunteers.

Neukölln 2040 is the initiative of the city of Berlin that provides infrastructure and funding to support founding organizations that drive climate and biodiversity innovation and transformation, counting 500 new co-ops, startups, collectives and organizations each year.

Care4Germany was founded as a collective of communal and private organizations to drive the transformation in industry. It has been incorporated into the German government which will offer everyone the right to a living-wage job within the ecological transition by 2040.

Additionally, there are three speculative communication campaigns which I describe in detail in Urban Heat Island Living: Berlin-Neukölln.

Scenario narrative: Berlin-Neukölln 2039 Transformation Report

The Berlin-Neukölln 2039 Transformation Report is a speculative physical and digital artifact from the year 2039, made jointly by the three speculative organizations, looking back at a decade of transformation.

The report was written in German and English and was initially published online in the summer of 2021 during the urban intervention Urban Heat Island Living: Berlin-Neukölln. It has later also been transformed and presented as a video newscast for an experiential intervention as well as a live newscast for another event.

Scenario Narrative

BERLIN-NEUKÖLLN TRANSFORMATION REPORT 2039

Looking Back At A Decade Of Transformations

Part 1: Heat Adaptation

Part 2: Social and ecological change

Part 3: Re-defining care work

This report is a joint effort by Hitze-Hilfswerk,
Neukölln 2040 and Care4Germany

PART 1: HEAT ADAPTATION

As climate impacts became more visible in the 21st century, Berlin began to endure frequent heatwaves.

The heatwaves of 2029 were especially severe – over 74000 Berliners were hospitalized, and 8800 died in the 5-month heat emergency. Schools and jobs were closed for months, and frequent electrical blackouts occurred as the grid tried to deal with an increase in air conditioning demand.

The heatwaves of 2029 became a turning point for climate action; accelerating momentum to green and climate-proof Berlin, as well as a call-to-action to protect all Berliners from future heatwaves.

After the deadly heatwaves of 2029, cooling tents popped up in parks providing shade and water misters, and proper cooling centers spread all around Berlin. Libraries, fitness centers, and co-working spaces have transformed into places people use to stay cool. People come to hang out, work, sleep, or get medical assistance in emergencies.

About half of the healthy population have at some point worked as heat responders during the summer. They travel to whichever European city is being hit hardest in a given week. That is, if they are fit enough to get through the entire season. Most only do it for one year anyways; they are volunteers after all, and once you've done all of Europe once, there's not much more to it.



Hitze-Hilfswerk, Germany's Federal Heat Response Agency, is a civil heat, health and urban protection organization supported by the German federal government. 99% of its 120000 members are volunteers.

ON THE MEDIA



Over 8000 dead as Berlin's deadly heat attack continues.

The summer of record breaking heat continues its deadly rampage as an additional 1200 people died last week due to heatstroke and health complications from the rolling power outages. The total deaths is now over 8000 in Berlin alone.



Berlin commemorates the dead from the 2029 heatwave.

This autumn has brought more than cooler temperatures. Mourners gather in Berlin's Brandenburg Gate to remember the almost 9000 people who lost their lives during the city's deadliest heat wave yet.



Hitzefrei days are scorching education, parents demand changes. After a record-setting 36 "heat days", frustrated parents demand that schools install air-conditioning to ensure children can learn adequately. End of year exams have been canceled in most school districts, and it's estimated that German students are now five months behind their counterparts in other countries.



Real estate prices spike near cooling centers. As Berlin heatwaves intensify each summer, prices for apartments within 500m of cooling centers are skyrocketing, rising 24% in the last two years. The trend is

increasing pressure on the government to release more air conditioning permits.



Hitze-Hilfswerk takes on new responsibilities. As a direct response to the deadly heatwave of 2029, the volunteer heat organization, Hitze-Hilfswerk (HHW), is expanding its responsibilities to protect the health of all Berliners during heatwaves. It will now manage all cooling centers in Berlin, as well as raise awareness about heatstroke prevention.



Grid overloaded from illegally cooled nightclubs and bars. Berliners are letting off steam and dancing away the tropical evenings in secret, underground

nightclubs with illegal air conditioning. Officials warn that the unsanctioned energy use is overloading the grid.



The mid-day ghost town of summer in Berlin. People are disappearing from Berlin streets between 10-4, in search of shade and cooling. It's become deadly to travel through the roasting metro or brave the streets during the midday heat.



Youth heat responders forge strong bonds. Instead of a “gap year”, youth have been signing up as heat responders across Europe to work protecting the vulnerable from deadly heat waves. Working in teams, the heat responders travel to cities

that experience heat waves, staffing medical tents, and keeping tabs on the elderly and less-mobile.



New wave of climate refugees expected as South Asia's heat wave persists. Temperatures in South Asia have been on a Continuous high over 45°C since March this year, making it the earliest heatwave on record. Overcrowded cities, unemployment, destroyed crop yields and empty water reservoirs are pushing another wave of climate refugees to head towards the north of Asia, Europe and North America. Over a tenth of global land is now a barely livable hot zone, compared to 1% in the 2020s.

PART 2: SOCIO-ECOLOGICAL TRANSFORMATION

After energy and financial markets crashed again from the 2029 heatwave power outages, an ecosystem of social and environmental innovation and resurgence evolved.

Berlin has set a strong focus on carbon accounting and wildlife regrowth projects. Tempelhof is now a forest, a proper cool air source during those frequent tropical nights when temperatures often do not drop below 25°C. Twice a year, it hosts the biggest solstice celebrations of the city, with people coming from all other neighborhoods with music, art, and gifts to share with strangers. To care for the other plants and

small animals, some neighborhoods chose to self-organize on messenger groups to water and feed them as a community, funded through the wildlife regrowth program.

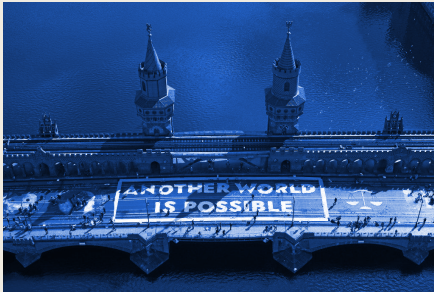
The city of Berlin has invested a fair deal into pushing their socio-environmental transformation agenda, though not until multiple repeated relief bills were passed after that horror summer of 2029. But thanks to meticulous whole economy accounting, they were able to calculate that proactive heat resilience was a better deal than reactive heat relief, and passed a historic fund for urban resilience.



Accompanying placements in new-economy nano degrees like Climate Medicine and European Permaculture & Food Systems are in particularly high demand among those transitioning to work in urban resilience.

Neukölln 2040 is the initiative of the city of Berlin that provides infrastructure and funding to support founding organizations that drive climate and biodiversity innovation and transformation, counting 500 new co-ops, startups, collectives & organizations per year.

ON THE MEDIA



Historic bill establishes €3 trillion resilience fund. Berlin is getting ahead of future heatwaves and climate impacts when today the government passed a gigantic fund for urban resilience. The bill will accelerate new cooling infrastructure and increase the ecological greening of the city.



Tempelhof Forst revels in an earth-loving, carbon-positive festival. While the Tempelhof Forst is primarily known for the part of the city that sequesters the most carbon, next week it will erupt in a carbon positive, Earth positive festival that celebrates a resilient connection with our earth.



Berlin biodiversity winner: the Hermannstraße ventilation tunnel. For the third year in a row, the ventilation tunnel at Hermannstraße has the most diverse and abundant flora and fauna in Berlin, proving yet again that the city's investment in this impressive urban project is not only lowering intense heat temperatures, but also increasing our ecological resilience as a city.



Neighborhood groups nurture new tropical eco-systems. The tropical nights of Berlin's summer heatwaves are creating ideal climates for all sorts of new plant species and animals, migrating up from hotter latitudes. Neighborhood groups care for the new species, share watering

schedules as well as best tips and practices.



Berlin #1 city for carbon, biodiversity startups. Berlin's investment in fintech and climate resilience has created the perfect environment for carbon accounting startups. These social entrepreneurs are proving that the new currency is biodiversity and carbon reduction.



The new must-have skill in Berlin: caring for fungi. As the temperatures heat up again, the high temperatures can be tough on the many fungi across the city. Local classes are available to learn care taking skills to ensure that these critical ecological creatures can survive the heat.



Graduates with food nanodegrees are in high demand.

The first class of graduates in Berlin University's food nanodegree prepare to join an industry in regenerative farming that is exploding in the countryside outside Berlin, and the world beyond.

PART 3: REDEFINING CARE WORK WITH A PUBLIC JOB GUARANTEE

The politician's new urban resilience agenda now supports over 500 co-ops and startups each year, providing all kinds of jobs in animal, plant, human and societal wellbeing care, electronics and infrastructure maintenance.

The public job guarantee is in the last pilot phase, due to be fully launched in 2040, making Berlin the first European city to offer each resident the right to meaningful, living wage work in the socio-ecological transition. Over 2 million Berliners – more than half of its population – have registered their interest in a placement. Thirteen years since its inception, the program has supplied over 1.5 million Berliners with new occupations, and is planning to close its backlog until the second quarter of 2040.

Neukölln itself has visibly transformed in a mix of gentrification and the changing urban climate. High-end laundromat-cafe-bookshop hybrids are as common as movable trees on boardwalks that provide shade across the day.

A ventilation tunnel and waterway between Hermannstraße and Sonnenallee runs through former Werbellinstraße, which used to be a major heat sink forming the Neukölln-Nord heat island. People living in this and many other streets too have adapted to shield their buildings from the heating through DIY green facades, roofs painted white with set up multispecies gardens for birds and insects, and the occasional salsa dancing party on the rooftop.

Care4Germany was founded as a collective of communal and private organizations to drive the transformation in industry. It has been incorporated into the German government which will offer everyone the right to a living-wage job within the ecological transition by 2040.



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CARE 4 GERMANY

ON THE MEDIA



Berlin to be the first European city with public job guarantee.

(2039) Following a successful three-year pilot, Berlin is extending an ambitious public job guarantee to every resident, guaranteeing the right to meaningful, living wage work in the socio-ecological transition.



How to start your own co-op as part of the job guarantee.

Here's a step-by-step guide to starting your own project, or joining one of the thousands of innovative co-ops across the city. This resource has answers to all your questions.



The most successful co-ops during the pilot: natural artists and carbon programming. From artists making living art on the city's green facades, to the most efficient programming platform for carbon accounting, Berlin's co-op scene continues to inspire and drive social results.



Hyper-local resilience is the “new normal.” Faced with volatility on global and transnational markets, provisioning structures that function outside of exchange markets are thriving. Britz locality is now supplied entirely by 200 community supported bakeries, organized as consumer- producer

cooperatives. Grain is provided by member farms in Brandenburg.



Surprise for C4G: care renaissance spreads to lifestyle industry. The public job guarantee has found unexpected imitators. Gyms that were affected by the planned electricity cuts now engage their visitors to cut trees in Hasenheide agroforest, lift and care for the elderly or speed-deliver food cooked in community kitchens.

FURTHER READING

- Heat Exhaustion, Apocalyptic Scenes: What It's Like Fighting The Us's Biggest Wildfire. (2021, [The Guardian](#)).
- The Search for the Dr. Fauci Of Climate Change. (2021, [Grist](#)).
- Stimulus is an Environmental Disaster Waiting to Happen. (2021, [Foreign Policy](#)).
- Breaking Boundaries: The Science Of Our Planet. (2021, [Netflix](#)).
- The Ministry for the Future. (2020, Kim Stanley Robinson)
- Less is More. (2020, Jason Hickel).
- Take Back The Economy. (2013, J.K. Gibson-Graham).
- The 2084 Report. (2022, James Lawrence Powell).

Reflection

Based on auto-ethnographic writing and reflection, I have gathered guidelines that helped me during the process, as well as reflections on the making and content of the scenario, including some reflections from participants. Just like the process, this reflection is heavily intertwined with the reflection for the experiential interventions Urban Heat Island Living: Berlin-Neukölln and Climate Futuring Weekend. Here, I tried to separate learnings that only referred to the content of the scenario, not the interventions.

Thinking past first impacts. The main learning was to think past temperature-related issues and responses, and think of long-term consequences such as shortages or homes needing adaptation. It's not so much about the heat itself, but everything else coming out of it.

Shifting focus from urban heat islands to heatwaves. I started by looking at city-based issues and urban heat islands, which in themselves are not a climate phenomenon, but a built environment phenomenon. Later, I moved on to extreme heat in general, and focused a lot more on heatwaves.

Bringing across the severity of heatwaves and associated risks is a challenge. Heat waves are a “boring” emergency where nothing happens, and people are advised to stay at home, which makes it difficult to draw attention and mobilize to action. In a review of the book *Heat Wave* (Klinenberg, 2015), the goodreads user *molly* wrote:

Despite the fact that I was there, I never realized what a public health disaster this heat wave (and other previous and subsequent ones) was for Chicago until this book was assigned to me in grad school. A quick survey of Chicagoan friends and family found that not a single one knew of the huge death toll, although they certainly remembered the heat wave. Given the global trends toward creation of larger cities and overall warming climate for many

temperate North American cities, this is a very relevant warning.
(molly, n.d.)

This is consistent with the concept of “slow violence” (Nixon, 2013) where the destruction taking place gradually and often invisibly, without major dramatic events, is not perceived as violence.

When I started working on extreme heat in 2020, in Germany there was no wide-spread acknowledgement about the severity of heatwaves and the risks associated with them. Reports of past heat waves showed how they had been downplayed in the past (Klinenberg, 2015). Over the course of this PhD research (2020-2024), and with strategic press coverage (Biermann et al., 2022), I perceived a shift in attention towards and education about heat waves. However, this may also have been due to my attention towards them and that I was talking to more experts.

The physical experience of hot weather affects perception. People I talked to seemed to respond a lot better to the scenario during hotter weather in the summer months, during and right after (rather than before) heatwaves. However, some people, myself included, would sometimes have entirely forgotten about a heatwave just a day after it happened. A study has shown how people’s direct experience is an important factor, as opposed to messages about global averages. The study proposes that people were more inclined to donate to environmental groups when they perceived the weather as unusually warm (Li et al., 2011). From my observations on interest in my work, most commissioned projects came in in the summer months.

Learning from the Covid-19 pandemic. At the time when I first made the scenario in spring 2021 the experience of the pandemic was very present in my mind, and Berlin was first going through lockdowns and other contingency measures of the Covid-19 pandemic. When sharing the scenario with people, they focused a lot more on emergency preparedness in the first part of the scenario, rather than long-term transitions in the second part. Possibly, our own focus on the immediate response was influenced by that. This would be consistent with an

observation about technology that people “tend to overestimate the effect of a technology in the short run and underestimate the effect in the long run” (Ratcliffe, 2016). However, a rapid response and good contingency measures can reduce long term impacts.

View on resilience. This scenario saw resilience as mobilizing social institutions, changes to the urban environment, and care practices. After some time, and as the role of the Chief Heat Officer started gaining traction globally (One Billion Resilient, n.d.). I found the scenario too focused on changes to emergency response, urban planning and the built environment, and too little focused on transforming the structures in the city that contribute to global and local climate injustice.

Hyperlocal. The scenario focused specifically on Berlin and specific locations, it made climate impacts concrete. This was great when people could relate or even go and visit locations from the scenario themselves. Though still specific, it seemed more fictional and random in remote settings and when people did not know Berlin-Neukölln. Similarly, when reading Elvia Wilk’s climate fiction novel *Oval* (Wilk, 2019), I felt a lot of excitement from reading about specific locations in Neukölln, but the people in my book club did not. In improv theater, it is recommended to make specific references, but to things people will recognize. For example, using brand names rather than descriptions of products; “Snickers” rather than “chocolate bar”, for instance. This is because it makes scenes more memorable. In the end, our locations were only exemplary, and with a little local knowledge they could have easily been adapted to another location, such as a different district in Berlin or a different city with similar effects of extreme heat, such as Copenhagen.

Connecting social and ecological issues, but not covering everything. The scenario connected ecological and social issues, this is something one of the participants really valued as they had seen these issues addressed separately before, and that is what drew them to the scenario. At the same time, the first version of the scenario did not explicitly include migration, which was added in the revision in summer 2022, as well as more news to Part 3: Redefining Care Work. It was a

topic of many discussions in the teams and with participants, and the team included it in the revised narrative.

Global North perspective. Initially we saw it as a shortcoming that the scenario was from a Global North perspective, focusing mostly on a city like Berlin. This made us think back to our intention to show the impacts of the climate crisis on European Cities such as Berlin and show that even despite living there, we are affected by the crisis. The scenario, as such, may only be suitable (or helpful) to those socialized predominantly in those geographies.

Adapting the scenario based on current events. When doing a performative reading of the Transformation Report at an event right after the Russian invasion in Ukraine in the spring 2022, I was asked to omit deaths from the imagined pan-European heatwave as they might be triggering to people who have fled. After a conversation with the event partner, I agreed to omit the deaths but to keep the mention of hospitalizations and to still mention the severe health risks of heatwaves.

All scenarios are fiction. A helpful guideline was to remember my artistic license while creating the scenario in depth, and to do what I thought was valuable. All climate data and any scenario is science fiction, and I could use them as guidance or I could deviate from them.

Open ended scenario. Francesca and I deliberately created the scenario to be slightly incomplete. The purpose was to build a world that would allow people to fill it with their own characters, stories, emotions and experiences. This worked very well in generative settings, but seemed like it was lacking something when I tried to apply it in a more narrative-based experience.

Adapting the scenario. Initially we thought we might adapt it to other cities, especially as we hosted an immersive workshop with Denmark-based participants. However, it seemed to offer little benefit, and it would require local knowledge to change all locations to Copenhagen-based locations (and even then, not all participants knew

Copenhagen). It seemed easier to keep the specificity of a place but to treat it as an imaginary place for others, the way one might see any imaginary world. However, it doesn't really make sense to adapt or add to an existing scenario or the Report. Even though we could add one or two events or news, it would not change the main story. If we wanted to make larger changes, it would make more sense to do it in a different scenario.

Application of the scenario changed perception. Adapting the scenario to experiential interventions in different formats, as well as different audiences, people perceived the scenario very differently. Early feedback from a mixed-expertise audience in the generative Climate Futuring Weekend focused on the richness of the world and how many sub-stories would be possible there. That happened at the time when the scenario was the most incomplete and the intervention actively invited participants to create their own stories. As the team and I continued developing a narrative-based experience for a more subject matter expert audience, some of the later feedback was that it was too naive: first the big crash from the heat emergency, then the blooming development, is that not too easy? How the scenario was perceived depended a lot on the activities connected to it, similarly to how a theater play can be interpreted differently in different performances.

Scenario as starting point for other creations. When working with the scenario with others, the people we hired for specific projects (creative writing and acting coach, playwright) seemed to engage with the scenario well. At some point I also considered working with two participants from the workshop to create another, collaborative intervention.

We are in a highly decarbonizing world in the midst of a transition towards post-growth, where local communities self-organize to stay resilient from climate impacts, and all jobs are resilience jobs.

Climate impacts have been a daily part of life – the Mediterranean has been most affected in Europe, and the effects in the Global South have been even more dire. Every other year has been the hottest year on record. Extreme heat has killed half as many people as cancer, twice the area has burned from wildfires compared to pre-2030 – the “Year of Disillusionment” – and twenty-eight million people worldwide have been displaced from coastal floodings.

–Excerpt from the narrative “Resilience beyond the current view”



Resilience Beyond the Current View

Summer 2023

Creative Impact Research Centre Europe (CIRCE)

Project Team: Francesca Desmarais, Juli Sikorska, Jelka Wickham,
Ştefan Peca, Stuart Candy (advising)

Context

As a collective, Francesca and I wanted to update our working scenario – a combination of signals, extrapolations and tensions put together in an imaginary world – that we had used in the past as a baseline for other provocations (such as side projects, deep dives, pop-ups, and workshops that came out of Berlin-Neukölln 2039).

As we were commissioned by the CIRCE Research Lab Berlin to conduct a design research project on experiential climate scenarios (such as HeatCon) and their creative potential for transformative governance, we invited Jelka Wickham to the core team and developed this scenario narrative as the basis for the experiential intervention HeatCon 2023, and potential future spin-offs.

Intention

Francesca and I were curious about what an ongoing scanning and futuring practice might look like. We were looking to develop a practice that would allow us to continually scan for signals, explore intersections with other issues, and expand the working scenario that we used as a basis for Urban Heat Studio work.

Content-wise, we had felt that our old scenario Berlin-Neukölln 2039 was insufficient. Heatwaves that had rarely been linked to the climate crisis had gained significant media attention in Germany (see (Biermann et al., 2022), and they had been more intense every year, alongside other climate impacts such as floods, wildfires and droughts. Our previous scenario seemed outdated as a futuring practice. As such, we had become interested in incorporating more components such as longer-term impacts, larger-scale changes to economic and governance systems, as well as interconnected social issues, such as activism burnout.

From the beginning, this scenario was meant to serve as a basis for an immersive play. The way we achieved this was by shaping the narrative format to focus on elements that we would use in the development of an immersive play (Scenario Narrative: Resilience Beyond the Current View, Experiential Situations). In the appendix, there are further contents such as Key Scenario Elements and work-in-progress documents.

Background

In the 2020s, public awareness of climate impacts has grown significantly and extreme heat has been widely recognized as a major climate impact. The 2021 Western North America heat wave was “among the most extreme events ever recorded globally” (Thompson et al., 2022). In July 2023, the WHO Regional Office for Europe declared the climate crisis and extreme weather events a public health emergency for the first time (Copernicus, 2024). In response, new roles like Chief Heat Officers have emerged in cities worldwide, implementing various initiatives to adapt to extreme heat, primarily focusing on changes to the built environment and increasing heat wave preparedness (One Billion Resilient, n.d.).

However, the long-term impacts of extreme heat extend far beyond urban centers in developed countries and these measures may not be sufficient to address the full scope of the challenge. In regions like the Middle East, India, and Pakistan, for instance, heat has long reached deadly levels, with temperatures up to 54°C (129°F) recorded (Tapper, 2016). At these temperatures, it is no longer possible to merely adapt, and traditional mitigation measures have not been enough. Researchers have thus suggested a “Transformative Adaptation” paradigm (Pelling et al., 2015) that goes beyond incremental changes. It entails changes in core attributes of a system by tackling the interconnected causes of vulnerability and unsustainability, questioning established power structures and social contracts, and addressing fundamental questions of sustainability, regeneration and justice, beyond mere climate risks (Pelling et al., 2015).

Questions

What could a truly long-term climate adaptation and transition look like?

What does an ongoing futuring practice look like?

Process

Francesca and I began by gathering the signals of change we had noticed since our last scenario. This helped determine the direction of what we were interested in exploring in this new scenario. After conceptualizing this exploration, we invited Jelka Wickham to shape the scenario with us. This time there was a clear output in mind: a scenario narrative for an immersive gathering for people related to climate policy across Europe. We followed an intuitive, exploratory process loosely based in the “Oxford Scenario Planning Approach” (Ramírez & Wilkinson, 2016) and inspired by “Alternative Futures” at the Manoa School (Dator, 2009).

This process leading to the scenario narrative was heavily intertwined with the experiential intervention HeatCon 2023 that brought this scenario to life. Furthermore, the transition between the two was the process of developing a structure for an immersive play, for which we chose to work with immersive playwright Ștefan Peca. Wherever possible, I try to separately describe parts of the process that informed the scenario and the parts that informed the experiential intervention.

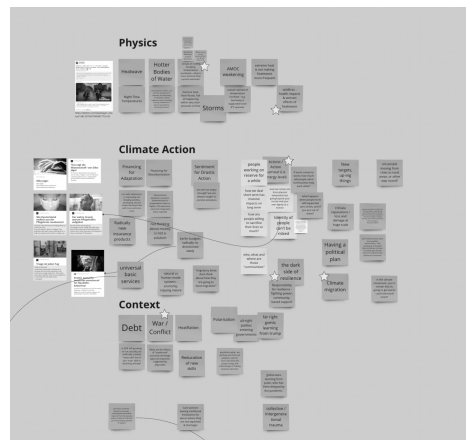
Process Overview



Pre-project exploration, signal gathering, intention shaping. To explore new directions, we gathered signals of change and used a metaphor of islands – Surprise, Worry, Wonder, and Anger – to categorize our findings. Key signals included climate concerns, governance challenges (e.g. insights we uncovered in the process towards the Heat Resilient Cities Conference), and global responses to crises. Though these signals were more closely connected to the past scenario, rather than what evolved in this one, they were pointing towards longer-term, more structural transformations we wanted to explore, and this step helped us explore that intention.

Signal gathering. We looked at the signals pointing towards change, the things we were seeing and thinking about and organized them into three categories:

- Physics that are most closely related to climate change. For example, overlapping extreme weather events,



such as extreme heat, droughts, rain and flooding.

- Climate action, which is the intentional or unintentional responses to those changes in the physical world. For example, the so-called moral injury of nurses who are forced to go against their ethic during extreme periods such as the Covid pandemic (Jäger, 2021), or instrumentalizing resilience (Borie et al., 2019).
- Context, which are the developments happening in parallel or overarching landscape, similar to landscape conditions in the Multi-Level Perspective (Geels, 2005). For example, we looked at wars and conflicts¹¹ and far-right parties being elected into governments across Europe.

‘Factors’ and cards. We selected 12 topics that we thought were important to explore in our adaptation futures. We conducted light research, gathering insights and quotes, and imagined possible directions each factor could take – continue, collapse, transform or discipline, inspired by the four “Alternative Futures” (Dator, 2009)

12 Extrapolated themes around resilience

- Climate Migration
- Global North, Global South - and Global East?
- (Mental) health effects of multicrisis
- Adaptation Financing
- Diverse Climate Movements
- (The dark side of) Resilience
- War and Conflict
- Dealing with multiple crises
- Idealism Burnout
- Mandatory Heat Adaptation
- Polarization and Populism
- Universal Basic Services and Post-Growth

¹¹ We explored this in August-September 2023, just before October 7, 2023, and the ongoing Israel-Palestine conflict that caused disputes among the public.

Factor Card

Idealism Burnout

People who have strongly associated their identities with the cause of climate action (and care) face overwhelming negative outcomes and are asked to put in extra labor for the cause. But the cause keeps changing. Mass burnout is a risk to a resilient workforce as even more action is required across a wide range of jobs and professions.

Continue

Climate justice workers is a one-year thing, constant rotating crop of fresh activists without much reflection or charge

Climate justice workers is a one-year thing, constant rotating crop of fresh activists without much reflection or charge

Collapse

at least one person in every community has high quality leadership skills, and that's a good thing

at least one person in every community has high quality leadership skills, and that's a good thing

Transform

Climate careers: too many for the new jobs. Children's hospitals, universities, nonprofits, etc. are all going to have to get their own budgets, and then there's the...

Climate careers: too many for the new jobs. Children's hospitals, universities, nonprofits, etc. are all going to have to get their own budgets, and then there's the...

Discipline

Climate professions: too many for the new jobs. Children's hospitals, universities, nonprofits, etc. are all going to have to get their own budgets, and then there's the...

Climate professions: too many for the new jobs. Children's hospitals, universities, nonprofits, etc. are all going to have to get their own budgets, and then there's the...

Example: Diverse Climate Movements

Climate movements grow more diverse and organize their structures in wildly different directions. This includes many fringe groups, out of which some apply techniques considered to be “violent.” Climate and heat measures on a local level are at risk of losing acceptance as many citizens don't want to be associated with such methods. Despite the need, they discredit the trustworthiness of climate (justice) movements, solidarity among movements diminishes, and it takes more to reach a critical mass, therefore, reducing the effectiveness of actions.

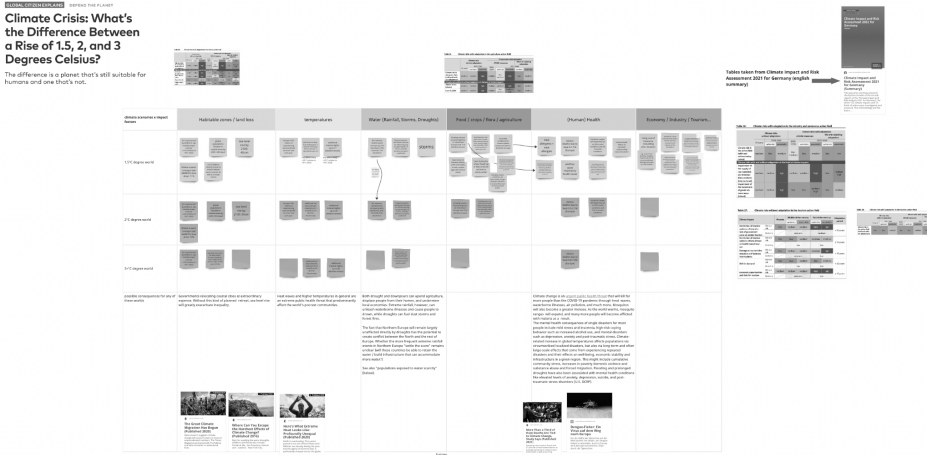
Messy discussion, sense making, tensions, key disagreements.

We went back and forth about how to put it together. As neither the continued nor collapsed futures were relevant to our goal of transforming the systems towards resilience, we chose a few key elements from our “transformed” and “discipline” directions to weave together. Ultimately, we distilled our discussions into a few key disagreements. We tried to weave the main disagreements into a scenario to give it tension and help us explore them better. For context, both of these came out of the same instances of factors; the *Discipline* scenario pointed towards scarcity, one of us described it as “the loving but strict parents.” In which, there is a war on resources and only very basic care, a decent amount of restriction

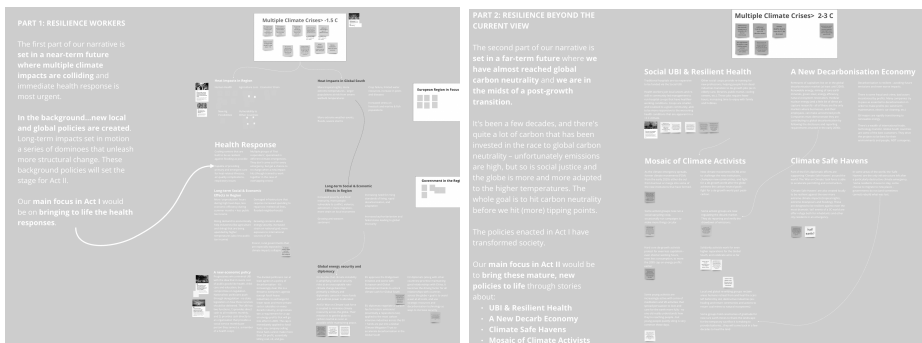
is imposed in order to make it through overlapping global crises. In contrast, the *Transform* scenario pointed towards abundance, and sharing of existing but unbalanced resources. In which, under great collective effort, global finance systems are restructured to drive resources to those who need them most.



Climate Impacts. We researched projected climate impacts for Europe (and Global South) across different temperature thresholds. We looked specifically at habitable zones and land loss; temperature; water (rainfall, storms, droughts); food, crops, flora and agriculture; (human) health; economy and industry; and tourism. For more detail, see [Climate Projections](#).



Rough timeline. We made a rough timeline of a scenario. We looked at how the elements would weave together in a somewhat believable way, and what could be the narrative scaffolding for taking people through a historical future'. We meshed these two scenarios into a single timeline as our goal was to produce a scenario narrative for an immersion, and ended up with one scenario that was explorative (looking at what *could* be, not a normative one that would suggest what *should* be) and situational (looking at a point in time), with two “timestamps” of a near- and far-future. Keeping the immersion in mind and how we might help ease people into the scenario, the near-term timestamp was slightly less cognitively distant than the second timestamp.



Immersive Structure. We shared the narrative scaffold with a playwright and went through three iterations to revise the structure and script for the constraints of our production. This process stripped down the complexity of the scenario to focus on a small handful of themes from the underlying scenario – for more details, see [Key Scenario Elements](#).

Outcomes

This process produced the [Key Scenario Elements](#) that served as scaffolding for the scenario narrative and two experiential situations at two different timestamps from that world.

Scenario Narrative: Resilience Beyond the Current View

We are in a highly decarbonizing world in the midst of a transition towards post-growth, where local communities self-organize to stay resilient from climate impacts. In this scenario, all jobs are resilience jobs.

Climate impacts have been a daily part of life – the Mediterranean has been most affected in Europe, and the effects in the Global South have been even more dire. Every other year has been the hottest year on record. Extreme heat has killed half as many people as cancer, twice the area has burned from wildfires compared to pre-2030 – the “Year of Disillusionment” – and twenty-eight million people worldwide have been displaced from coastal floodings.

Emissions are at a record low but decarbonization has come at a high cost. Turning a heavy ship still takes fuel. It is a global accomplishment that we’re nearing carbon neutrality but people’s lives and livelihoods are continuously under threat. Major new physical and social infrastructure projects have raised resilience.

Emissions and ecological destruction are considered a security threat. They destabilize local economies and they increase conflict and international security. An EU “Decarbonization Marathon” task force was created to decarbonise as fast as possible – speed is the only metric.

The same policies that unleashed prosperity and well-being in the 20th century are not fit for a world in an existential battle with climate change. Thanks to activists and the appointment of degrowth economists in the highest ranks of global economic systems, we have entered an era of post-growth. Hard choices have been made, and many sectors of the economy in over-industrialized countries have had to phase down – only decarbonisation industries are exempt.

People are re-discovering what it's worth living for. Transitioning systems changed local economies and individual lives. With many basic needs covered, there is less need for salaried work, and many people in de-industrializing countries have found themselves connecting with local communities, re-evaluating their personal resources and how they spend their time.

Experiential Situation: Resilience Worker's Fair

In a near-term future, participants find themselves at a recruitment fair for climate resilience jobs. Three organizations compete for new recruits by showing different aspects of what climate resilience could mean and expanding it beyond a technical understanding.



- **Emergence Circles:** A self-organized structure offering first aid on the compounding effects of heat, floods, conflicts, and economic crises while centering mental and physical resilience of emergency workers.
- **Rehousing Office:** Finding new homes for climate refugees. Involves navigating housing politics and dealing with conflicts around sharing.
- **Balancing Abundance:** Providing universal basic services such as healthcare, energy, transportation and rent; helping people shift mindsets from performance to valuing their time.

Participants visit all three stations, perform aptitude tests and then join one of the organizations, culminating in a community ritual.

Experiential Situation: Safe Haven Council Meeting

A few decades further into the future, participants attend a council meeting of a community classified as a safe haven from climate impacts. They need to allocate a surplus amount of money based on three suggestions:



- **Pandemic preparedness of the community-led hospital:** With more vector-borne diseases, It comes with higher upfront costs, but it's an investment in long term health.
- **Advancing decarbonization by switching from biogas to composting.** The promise of becoming carbon-neutral may require a reduction in energy consumption. The motto is "long-term win over short-term comfort."
- **Developing the neighboring community into a safe haven:** investing in infrastructure and community network as climate impacts keep intensifying, because we are only truly resilient if everyone is resilient.

As a self-governing community, participants follow an equitable decision-making process, raising questions, concerns and proposals to reach consent.

Reflection

Based on team reflections in the making process and after staging the experiential intervention HeatCon 2023 as well as my own autoethnographic writing, I gathered reflections on the two questions regarding long-term, transformative climate adaptation. This included consideration on what an ongoing futuring practice could look like.

Long-term, transformative climate adaptation. This narrative highlighted three key themes and the metaphors behind them: balancing abundance, decarbonization marathon, and safe havens. This highlighted key discussions in the team – for example, how “balancing abundance” related to discussions about how “realistic” it is to speak of adopting a view of abundance and post-growth worlds. Specifically, and problematically, while many current measures in the Global North (where we are based) are focused around reduction such as in consumption, carbon emissions, and resource extraction.

Responding to current events. Designing the experiential intervention based on the second narrative, to be staged two weeks after the escalation of the Israel-Palestine occupation and the subsequent public disputes in October 2023, the team chose to omit the theme of terror attacks compounding with climate impacts. This was not to minimize or deflect but in order to not let a very charged topic become a potential trigger and lead collective attention away from the other themes in the scenario narrative.

Ongoing futuring practice. After crafting the first scenario narrative, we attempted to introduce new themes that had initially come too short, such as migration. Despite incorporating them into the narrative, these themes often felt like afterthoughts and incremental additions. Over time, “additional points” and open questions accumulated, the narrative felt increasingly outdated, and we recognized the need for a completely new one. Since the original narrative had inspired subsequent work, we decided to separate the re-futuring process from other studio activities. Rather than continuously extending the existing scenario with new

extrapolations, we envisioned a seasonal approach for the collective's futuring practice. Each season would involve a re-futuring phase, laying the groundwork for future activities. We used the first narrative for two years before developing this second narrative.

Always behind? An open question that emerged in a team reflection was, “is it possible to play an imagined scenario that is almost reality (just somewhere else) – are we going to be left behind by the world?” The team discussed methods (using more wild cards – low-probability, large-effect events), and adopting an even broader view towards other geographies and happenings where a situation is already a reality somewhere else. It led us to question whether any actionable climate work can count as futures – if something is more achievable, it is closer to reality, and thus still extrapolating from current ideas – is it still an exploration then?

The question remains, how to deal with topics of interest so that current events (such as terrorism or war) don't feel misplaced or dismissed as *just* current events. In a subsequent re-futuring process, we would like to make the responsibility of scenario making explicit. For instance, the reason why we do it and who is involved is just as relevant as the scenario itself.

Learnings on scenario narratives

In this section I have presented the development of two scenario narratives that looked at how European cities might radically adapt to the climate crisis, and transform. While both explore the concept of resilience and transformative adaptation (Pelling et al., 2015), it manifests differently in the two narratives.

The first scenario narrative Berlin-Neukölln 2039 was developed with methods such as systems thinking (Meadows, 1999) and “Science Fiction Prototyping” (Johnson, 2011). It resulted in a scenario narrative in the form of a fictional transformation report focusing on resilience as mobilizing social institutions, changes to the built environment, and care and maintenance practices. Key themes included a heat response network, prioritizing social ecological growth over economic growth, and caring for humans and other parts of nature and infrastructure.

The second scenario narrative Resilience Beyond the Current View was developed inspired by methods such as the Oxford Scenario Planning approach (Ramírez & Wilkinson, 2016) and Alternative Futures (Dator, 2009), and it led to a scenario narrative in the form of a fictional world description and experiential situations, as well as an immersive play structure. This scenario narrative focuses on resilience as community-led healthcare, retraining for post-growth activities, a decarbonization marathon, and climate safe havens. Key themes include compounding climate impacts, rehousing, universal basic income (UBI) and services (UBS).

The second narrative actively introduced new metaphors, such as decarbonization marathon, safe havens, and balancing abundance.

The world we imagined was one where heat waves have become even more frequent and intense, with noticeable consequences for the entire population. People are grappling with the effects of extreme heat waves, some being hospitalized, schools and jobs closing for months, and frequent electrical blackouts occur all across Europe. Cooling Centers in former malls and pop-up tents in parks are the only refuge for many residents. People come to cool off, hang out, work, sleep, and get medical assistance in emergencies, assisted by volunteer heat responders and experts, many of whom have come from southern countries to Berlin for the heatwave.

We looked at resilience through different lenses. What if we had a collective, system-level response to heat stress that we all might be vulnerable to? What if cities like Berlin actively shaped the social and ecological transition and prioritized funding, infrastructure and support for those driving the change towards becoming planet-positive? What if we approached care work seriously on a system-level – care for humans of all walks of life and other forms of life, but also care for electronics and infrastructure? What if every resident had a right to well-paid, meaningful work within the social-ecological transition, and enough time to follow one's other goals? What if we prioritized building resilience, investing in a new wellbeing economy, over responding to crises with huge relief bills to support a fossil-fuel economy?

This is neither a prediction nor a desired development, but a possible way to look at what climate adaptation and mitigation might look like if a city like Berlin addressed it on a collective level for all its residents.

In the world we speculated, we imagined large structural changes to the built environment to protect all the human and more-than-human urban residents. As well, we considered changes to the political and economic systems to make it happen, and a historic fund to make it possible. When my collaborator Francesca and I started out, we did not quite intend to

suggest dismantling capitalism and asking for a massive state budget to do so. However, this is the conclusion our exploration led us to.

“When we started out, we did not envision suggesting to dismantle capitalism and asking for a massive state budget to do so”
–Francesca Desmarais,
collaborator

Taking it a step further, we looked at what those structural changes to social, political and economic systems that go beyond urban infrastructure could look like.

What if resilience is community-led healthcare, resilience as retraining for degrowth jobs, as Climate Safe Havens, as rapid, war-like decarbonization? We imagined a highly decarbonizing world in the midst of a transformation towards post-growth. Climate impacts have been a daily part of life – the Mediterranean has been most affected in Europe, and the effects in the Global South have been even more dire. But emissions are at a record low – though decarbonization has come at a high cost– and emissions and ecological destruction are now considered a security threat. The same policies that unleashed prosperity and well-being in the 20th century are not fit for a world in an existential battle with climate change and people are re-discovering what it’s worth living for.

The metaphors that we used to describe change were important to us, and Dan Lockton and Stuart Candy even suggest that “actively generating, proposing, and following through the implications of new metaphors” (2019, p.42) for concepts particularly relevant to the transitions and futures envisioned. Rather than speaking of fighting climate change – which raises questions about who we are fighting

against – we chose the metaphor of a decarbonization marathon. It was more uniting, preparing for a long time, building a network for support and cheering on, making sure you don't burn yourself out in a sprint. Rather than talking about sacrifice – something that is socially contested – we spoke of rebalancing all the abundance that exists in the world already – that we have enough and we are enough. Changing the metaphors in our own speech has changed our mindsets.

Deconstructing metaphors with others (see [HeatCon 2023](#)), the metaphor of climate safe havens caused worries of exclusivity. Within the team, changing the metaphors we use in our own speech has shifted our perspectives on barriers, such as unequal distribution, and opportunities, such as rebalancing, within the team.

Additional learnings

Go beyond climate impacts as fast as possible. Imagine what happens to humans and non-humans and what they do in return. That is where the most exciting speculation happens, and the most meaningful implications on everyday life become visible.

Changing views on resilience and change. The collective's terminology around resilience evolved. It moved away from perspectives centering humans and business-focused innovation, toward more interconnected, ecological approaches.

Responding to current events. In both cases, certain themes were adapted based on current events, both times related to geopolitical conflicts and wars.. In both cases, either I or we as the team chose to make an adaptation or omission in order not to risk a charged topic or cause conflict during the experiential intervention, and potentially distract from other, more relevant themes and provocations.

Ending with questions. While the first scenario narrative was intended to be incomplete to invite the imaginations of participants, it left us with an open question about something we first called “deep resilience.” Later this was replaced by the existing concept of “transformative adaptation.”

We wondered what resilience could look like when it went beyond changes to urban infrastructure, physical and social. The second scenario narrative helped answer that question. It brought up multiple provocations for further explorations. In team reflections, we noted that the two narratives could be connected, with the first highlighting climate impacts and setting the stage for longer-term social and governance changes in the second scenario narrative. The questions that I have found most interesting to speculate on are provocative in the way that they are big and daring. The most “liberatory” ones are asking for what we want, not what we think we can get.

Different goals, processes, and results. The two scenario narratives were developed through different methods, also as our methods skills and understanding of outcomes we aimed for matured over time. The first had an open-ended outcome and informed an immersive futuring workshop. It followed a more linear, cause-and-effect logic based on extrapolation, using custom uncertainties to map different scenarios and merge them into a pathway on a timeline. As such, it resembled more closely current climate adaptation plans focusing on interventions at the scale of a city. The second was intended to inform an immersive performance structure. It used four generic futures to extrapolate from signals of change, with a focus on tensions between key concepts. These included, for example, resource scarcity due to mismanagement versus global efforts towards coordination for redistribution. Unintentionally this related to debates on unsustainable growth versus degrowth.

The goal of the scenario narrative depends on the intention. As the Learnings from designing experiential interventions will later show, how to shape the scenario narrative depended on the overall intention for what a narrative or an experiential intervention should do. Consequently, it is part of a larger set of design decisions, which I later explain in the Intention Framework.

Moving from a speculative report to a performance structure. The initial speculative Transformation Report served as a generic, tangible

representation of the speculation of a city in transformation through a communication design object, before we knew how we would use it next. In the second scenario narrative, we were clear that we would be staging experiential scenarios. By synthesizing the key scenario elements, we facilitated conversations with the playwright, breaking down the complex scenario into specific elements that could be represented in the experiential situation. Ultimately, the immersive structure is what we, as facilitator-performers, later needed to stage the situations, and we created supporting speculative artifacts, such as an aptitude test for Rehousing Workers.

Separating re-futuring from experiential interventions. It made sense to separate re-futuring from other activities in a season, such as the experiential intervention. Though we did ultimately shape the narratives towards the experiential intervention, and the format of the narrative shaped the focus and depth of the scenario it explored. We evaluated that it still made sense to keep the re-futuring process as a separate overarching phase that would inform and inspire the remaining activities for the season.

Seasonal approach. The narratives became the foundation for other studio work, together shaping what we called a *Season*. This means creating a seasonal approach in which re-futuring (or: “spring”) plants the seeds for subsequent activities (or: “summer”), harvesting reflections (or: “fall”) and resting (or: “winter”), before re-futuring can begin again. The content from the scenario narratives inspired more explorations, such as interventions like the Cooling Center, and other workshops.

The first narrative influenced workshops on urban heat resilience with partners like the Red Cross, Climate KIC and CityLab Berlin, as well as the pop-up cooling center. The second narrative offered provocations and ideas for further explorations, such as emergence circles and a rehousing office. It prompted us to think about what if there was a municipal office for balancing abundance, and what it would take to develop safe havens, and how can we design them inclusively? We even developed branding for both scenarios – the first emerged from the

design of the posters for the intervention, and the brand for the three fictional organizations. As we were getting ready to develop the second Season, in parallel, we developed a brand for the studio collective based on different color palettes that would allow us to represent multiple scenarios.

THREE EXPERIENTIAL INTERVENTIONS

In this chapter, I describe my exploration on how experiential interventions help climate practitioners to surface emotions about futures, and openly explore perspectives about barriers and opportunities that underlie assumptions about these futures (research question 2). This resulted in different formats of experiential interventions: Urban Heat Island Living: Berlin-Neukölln is an intervention in public space using large-scale posters and floor stickers on subway platform floors, presenting a speculative communication campaign in three steps, from a future, hotter Berlin. Cooling Center is a pop-up space that people could retreat to during extreme heat periods, divided in three sections referring to what one could do there during two minutes, two hours, and two days. HeatCon is an annual gathering for climate practitioners to envision and embody radically resilient futures. In three iterations of HeatCon, I explored three formats of immersive gathering: an immersive improv theater and creative writing workshop, a live-action role play, and an immersive performance. Each time, paired with a sense making session.



Urban Heat Island Living

Urban intervention in form of large-scale posters and floor stickers



Cooling Center

Pop up space as refuge from extreme heat for two minutes, two hours, two days



HeatCon

Annual gathering for climate practitioners to envision and embody radically resilient futures

WARNUNG! HITZE SMOG ALARM



HITZE HILFE WERK
SEIT 2020

**MAX. AUFENTHALTSDAUER
DRAUSSEN OHNE MASKE:
11 MINUTEN**

BESUCHEN SIE EIN KÜHLUNGSZENTRUM MIT
GERINGER LUFT IN IHRER NÄHE. KAPAZITÄT
BEGRENZT, PRÜFEN SIE DIE VERFÜGBARKEIT
UNTER WWW.HITZEHILFESWERK.DE



Urban Heat Island Living: Berlin-Neukölln

Urban intervention in form of large-scale
posters and floor stickers

December 2020-August 2021
Neue Gesellschaft für Bildende Kunst
Project Team: Juli Sikorska,
supported by Ervin Parashumti and Francesca Desmarais

Context and Intention

I wanted to explore imaginary worlds that look at how European cities might radically adapt to extreme heat. I invited Francesca to help build an imaginary world (see [Berlin-Neukölln 2039](#)). Together we created a scenario narrative, translated it into a speculative transformation report and posters from speculative organizations and hung them in public spaces (see [Urban Heat Island Living: Berlin-Neukölln](#)). This intervention was intended to bring that speculation to life in public spaces, right in the middle of the summer. Through large-scale posters and floor stickers as speculative artifacts, I wanted to give people in Berlin-Neukölln an experience of living in a much hotter, more resilient Berlin.

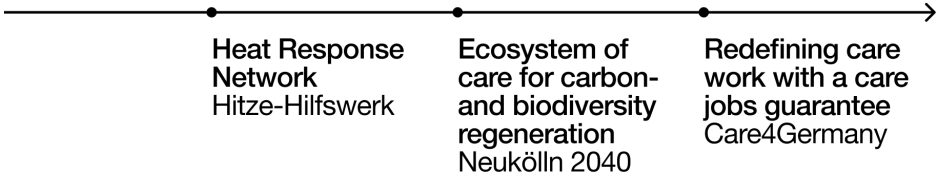
I pitched an immersive urban intervention to *neue Gesellschaft für Bildende Kunst (nGbK)* and their open competition for art in public space, *Art in the Underground 2020/21: as above, so below*. The curatorial project dealt with social biotopes and changes to urban habitats, focusing on the U8 underground line (Juan & Meiffert, 2022). Specifically, it focused on the underground stop Leinestrasse around which the future scenario was centered, and where I lived. The curators were interested in how urban audiences – locals, passersby – can be engaged in speculation in public space through large-scale communication materials and art education activities.¹² Initially, the [Climate Futuring Weekend](#) was intended as a tool to include more voices in the speculation and generate more stories and speculative artifacts, such as posters for this intervention in public space. However, there was not enough time before the production of the posters for new ideas to be included, and so they became parallel experiential interventions.

I pitched the concept in summer 2020, a year before the heatwave in the Pacific-Northwest reached temperatures up to 49.6°C in the Canadian town of Lytton. In the same year, several European countries were severely affected by floods, bringing climate impacts and extreme heat in

¹² This urban intervention can also be found in Juan & Meiffert, 2022 in the chapter by Sikorska, 2022.

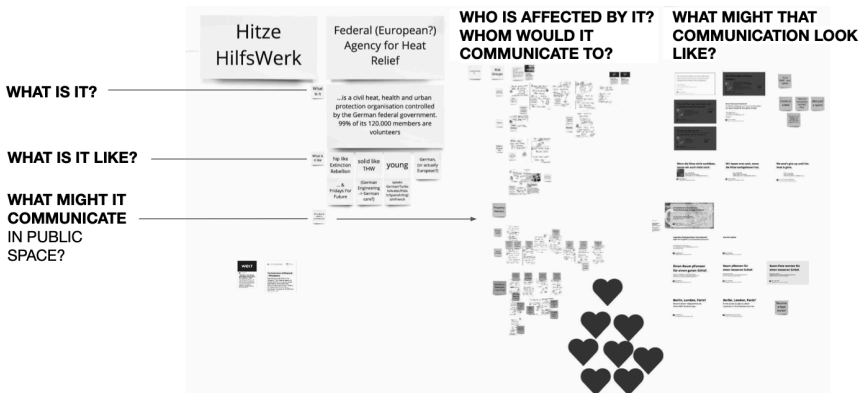
To create the final communication artifacts, I took the scenario narrative [Berlin-Neukölln 2039](#) developed in collaboration with Francesca Desmarais. For the purpose of this documentation, I am separating the process of developing the narrative. We had envisioned three historic organizations as part of our transformation pathway, and mapped them on a timeline leading up to our future vision.

Time

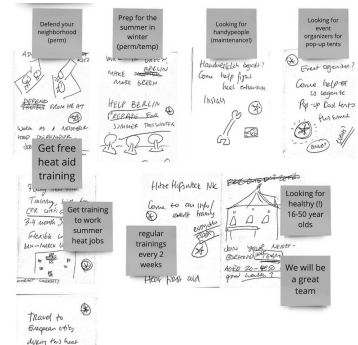


Speculating on organizations. I then took the three ideas for organizations and developed them further into speculative organizations. Specifically, this was with focus on brand and communication design, this is how the scenario would come to life. For more details on the process of developing speculative organizations, what they would be like, what they might communicate in public, see [Berlin-Neukölln 2039](#).

Example: Responding to extreme heat – Hitze-Hilfswerk (Heat Response Network)



Sketching messages, designing communication artifacts. For each of the organizations, I sketched multiple ideas for messages. I quickly designed low-fidelity posters with core messages in German and English, and invited the visual designer Ervin Parashumti to develop brands for the three organizations and create high-fidelity posters.



Berlin, London, Paris?

Travel across Europe as a heat responder in this heatwave summer.

 Federal Agency for Heat Relief
First to help in extreme heat events since 2026

AMSTERDAM

BERLIN

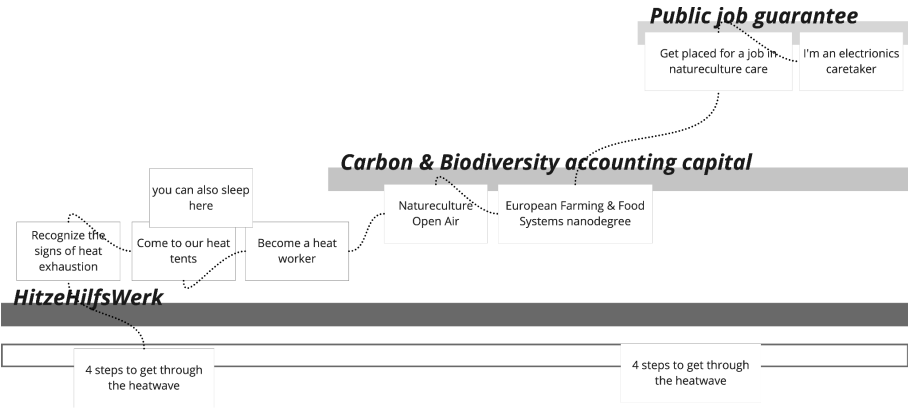
PARIS

 **HITZEHILFSWERK**
SINCE 2026

TRAVEL ACROSS EUROPE AS A HEAT RESPONDER IN THE SUMMER

FIND OUT MORE AT WWW.HITZEHILFSWERK.DE

Designing and testing a non-linear experience in public space, unfolding over the summer. Over the course of eight weeks, the scenario would unfold. It started with the Heat Response Network, and every two to three weeks added new motives from another speculative organization as a progression in the scenario. The storyline and messaging on communication materials were tested in a participatory research approach in a walkthrough with Berlin residents.



I presented the guerilla futures in the form of speculative communication materials like public health campaigns from Hitze-Hilfswerk, announcement for a co-op festival and an ad for a publicly-funded educational program in the social-environmental transformation, and ads for a large-scale program providing jobs in all kinds of care work.

Outcomes

Summer 2039. It has been 10 years since the deadly heat waves of 2029, when thousands of people got hospitalized, schools and jobs were closed for months, and frequent electrical blackouts occurred all across Europe.

Berlin is about to be hit by another week-long heatwave, with temperatures to rise up to 46°C again. Cooling centers in former malls and pop-up tents in parks are the only refuge for many residents. People come to cool off, hang out, work, sleep, and get medical assistance in emergencies, assisted by volunteer heat responders and experts, many of whom have come from southern countries to Berlin for this heatwave.

We are in the not-too-distant future, when heat waves have become even more frequent and intense, with noticeable consequences for the entire population.

This is neither a prediction nor a desired development, but a possible way to look at what climate adaptation and mitigation might look like, if a city like Berlin addressed it on a collective level for all its residents.



Today, cities already trap more heat than surrounding areas, making heat waves even more intense. Beyond the impending heat stress, Berlin is dealing with an ever-growing urban population, unemployment and homelessness. But it is also world-famous for its creatives, social innovators, startups and left-leaning city politics.

What does living with the climate crisis mean for us on an everyday basis? What new tensions will emerge? How will we respond to them? As abstract as the issue seems, it will affect us in the most everyday, mundane ways. If the suggested scenario were true, we would experience the implications of extreme heat everywhere: at home and at work, taking care of elderly, kids, pets and plants, on weekend strolls and day trips to the nearby lakes, in major streets like Hermannstraße and parks like Tempelhofer Feld. What if we took a radical, systems-level approach at the roots of the converging problems?

Responding to extreme heat: What if we had a collective, system-level response to heat stress that we all might be vulnerable to?¹³

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EXTREME HEAT




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¹³ At the time of the intervention, the website addresses on posters led to a dedicated website with pages for the three organizations. Each showed their section from the Berlin-Neukölln 2039 Transformation Report to give context on the speculative world, and a fine print explaining that it was an artistic intervention.

Shaping the social and ecological transformation: What if cities like Berlin actively shaped the social and ecological transition and prioritized funding, infrastructure and support for those driving the change towards becoming planet-positive?

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Re-defining care work: What if we approached care work seriously on a system-level – care for humans of all walks of life and other forms of life, but also care for electronics and infrastructure? What if every resident had a right to well-paid, meaningful work within the social-ecological transition, and enough time to follow one's other goals? What if we prioritized building resilience, investing in a new wellbeing economy, over responding to crises with huge relief bills to support a fossil-fuel economy?



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Urban Heat Island Living: Berlin Neukölln was a thought experiment that attempted to build urban resilience to this silent threat that is already affecting our lives. Extreme heat is the most common symptom of the climate crisis in European cities, and is the most overlooked because it lacks the dramatic impact of floods and other sudden "events."

The posters were placed around the Berlin district of Neukölln in summer 2021. They are examples for a speculative communication campaign by not-yet-existing organizations that could help build this resilience to extreme heat. Resilience that could potentially save many lives, and enable more just, joyful and planet-positive lifestyles.

But more than that, this was also an attempt to move from reactive to proactive action, regenerating from crisis, shaping the social-ecological transformation from the ground up, and seeing how it could be met top-down from the government.

Berlin has become the global capital of wellbeing, carbon and biodiversity innovation, and is on the path to offer every resident a living-wage job within the ongoing social-ecological transformation, now well visible in Neukölln. Among the biggest accomplishments are shaded streets filled with movable, drought-resistant trees, taken care of by neighbor watering groups who organize over messenger groups, and the newly constructed ventilation tunnels and waterways. However, it is the rewilding of Tempelhofer Forst that has been the biggest success yet. Over the last 10 years, it has developed into the most biodiverse area of Berlin, and it has seen the most exciting summer and winter solstice festivals in Europe.

The thought behind Urban Heat Island Living was to see what change could look like on a collective level. That is to say, collectively from both civil society and the government, instead of being left to individual consumer and citizen decisions. The project brings the focus towards systems-level care, and addresses it in four ways:

1. Care for humans as part of the immediate heat threat.
2. Care for other forms of life – animals, plants, other organisms, forests, rivers, climate systems – as part of the social-ecological transformation support system.
3. Care for our non-living companions, like household electronics and public infrastructure.
4. Care for those who care for others – human and more-than-human, individual and cultural, to provide them with good livelihoods.

This begs the question: what if we could shift from reacting to crises to proactively shaping the conditions for care?

Urban Heat Island Living: Berlin-Neukölln was an urban intervention and a poster exhibition in public space. It involved large-scale poster areas and floor stickers, showcased in and around the subway stop Leinestraße (U8) in Berlin-Neukölln. It is a speculative communication campaign for three organizations showing historical developments in public mobilization on various levels. For example, the volunteer-based Hitze-Hilfswerk (heat response agency); Neukölln2040, a city-based initiative to support collectives, co-ops and startups working towards a social-ecological transition, and Care4Germany, a national-scale initiative offering a public job guarantee in all kinds of “care” professions ranging from healthcare to public infrastructure to caring for culture.



What people said

People have reached out to me to share their responses, so I assume that those who reached out particularly resonated with it, such as the Twitter/X user @jule_jah who tweeted:

“Just drove past these depressive posters”

“Eben an diesen beklemmenden Plakaten vorbeigefahren”

—@jule_jah on Twitter/X, tweet (@jule_jah, 2021)

I responded to Jule in a private message, asking for more context, and they replied:

“Yesterday I biked past it and 10 meters further I thought, huh? What did it say? And I went back to have a closer look”

“Ich fuhr gestern mit dem Rad vorbei und dachte 10 Meter weiter: Halt mal?!

Was stand da bitte? Und fuhr zurück, um das genauer anzuschauen.”

—@jule_jah on Twitter/X, private message (@jule_jah, 2021)

A collaborator from the subsequent Climate Futuring Weekend intervention later reflected upon seeing the posters as part of his preparation for the workshops: “For years I had been aware but mostly impervious to issues of climate change, but now I was beginning to care” (Mills & Sikorska, 2021). In a reflection, he later added it is “a form of activism but done very subtly. Not in an aggressive way.”

Even years later, people would tell me that they saw the posters and how the work touched them. Sometimes I found out as they invited me to give talks¹⁴ or host workshops¹⁵, or through me showing pictures they would realize and share a memory.

I spoke to residents of Berlin-Neukölln during a street workshop in September 2021. As the last phase of the scenario intervention coincided with messaging for upcoming elections. Even though campaigning on

¹⁴ Zero Waste Festival Berlin 2022, Re:publica Offstage Program/CityLab

¹⁵ CityLab Kiezlabor 2023

advertisement spaces (like ours) is prohibited, they can easily be confused, and some people assumed the intervention was part of a party's election program. One person walking by even asked me what party I was from.



Other participants, invited to create their own speculative advertisements for a bulletin board from a hotter, future Berlin. They responded imaginatively with ideas about cooling backpacks and night bike rides to guided boat tours to Thuringia (which is currently not a coastal area).

Some people wrote messages on the posters directly. These seemed related to lockdown measures that were in place until a couple months before the intervention, suggesting that as a frame of reference for some.

To my Twitter/X thread narrating the intervention and other posts, I received a couple of responses from people questioning the messages and the climate crisis. Though they were trolls, it did spark reflections about the right time and context for this messaging, and if and how it might interfere with dedicated climate communication.



Reflection

Urgency and proximity. The project occurring shortly after severe floods in Germany and during increasing awareness of climate threats in the Global North seemed to create a powerful resonance. The intervention wasn't just speculative but felt urgently relevant, perhaps explaining why it continued to impact people years later. The proximity between fictional future crises and real current events may have helped bridge the imagination gap for viewers.

Legitimacy. The placement within official advertising spaces and its professional aesthetic seemed to lend the speculation legitimacy, to the point where some mistook it for actual government communication. This is in line with other observations that speculative design has moved out of the "showroom" and into the "field" (Farias et al., 2022) and raises interesting questions about how speculative design can leverage existing infrastructures and visual languages to appear more "real" and thus more impactful.

Care-based approach. The focus on care for humans, other life forms, infrastructure, and caregivers, embedded in a city like Berlin, offers a compelling alternative to prevailing urban climate narratives focused on technological solutions or individual behavior change. Viewers have pointed out that the connection of local social and climate issues is unique. This systems-level approach to care might have helped viewers see climate adaptation as a collective responsibility rather than just a personal burden.

Non-linear storytelling. A key challenge was designing for non-linear, fragmented viewer encounters with the intervention. While posters were installed sequentially over eight weeks, viewers might have seen them in any order or miss parts entirely. To provide context, each poster had a link to the respective speculative organization websites, all connecting to the speculative Transformation Report.

Transparency about the speculation. To maintain transparency about the speculative nature while preserving immersion, I incorporated future dates like "2029" directly into poster designs. Supporting websites included a clear "bout" section explaining the project's nature, helping viewers engage with the material while understanding its fictional framework.

Site-specific futuring. Grounding the futuring and storytelling experience in specific locations in Neukölln was powerful both in the creative process and the experience to the audience. This grounding in familiar locations helped viewers connect abstract futures to their daily reality, with many checking whether poster content matched their exact location (they were all related to the area).

Long-term engagement. The intervention generated responses years after the exhibition ended. The volume and depth of feedback suggested that the subtle activist approach successfully raised climate awareness while fostering genuine care, achieving impact through speculation rather than confrontation.

Generative. The creative process yielded many ideas for both stories and practical solutions. Speculating on the organizations linked to the transformation, the services, programs, policies and networks that could be designed prompted questions about the capacities of a design studio to respond to challenges 20 or 30 years from now?

Ideas for next steps included (co-)writing short fictional stories in the upcoming Climate Futuring Weekend, immersive workshops with policy makers and company executives, and an immersive experience co-design camp.

COOLING CENTER

HITZESCHUTZ
HELFER*IN

HITZESCHUTZ
HELFER*IN

ER
DE

Cooling Center

Pop up space as refuge from extreme heat
for two minutes, two hours, two days

September 2022, August 2023

DRK Wohlfahrtskongress, Deutsches Rotes Kreuz (a)

CityLab Kiezlabor am Tempelhofer Feld,

Technologiestiftung Berlin (b)

Project Team: Juli Sikorska (a,b), Julius Falk (a)

Context and Intention

The Cooling Center was a rapidly designed experiential intervention, designed in parallel to [Heat Resilient Cities Conference 2039](#). I had been thinking about creating a physical space as an experiential intervention, disguised as a cooling space. My collaborator Julius Falk and I had been speculating about the heat-response network Hitze-Hilfswerk during the work on the Conference. When Julius was invited to host a workshop at the annual Welfare Congress of the German Red Cross, we took this as an opportunity for a rapid experiment and guerilla intervention.

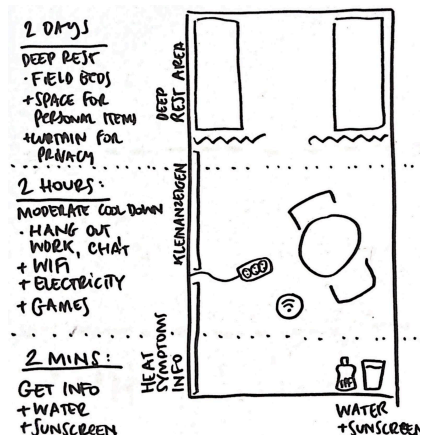
Question

How might a pop-up space provide relief to extreme heat in two minutes, two hours, and two days?

Process

In a rapid, co-creative process, Julius and I sketched out what the inside of a Cooling Center tent might look like, and how it might serve different use cases:

- Stopping by for two minutes to pick up some water, sun screen, and quick information.
- Staying for two hours to cool down from the midday heat, recharge the body and potential electronic devices, and learn more about heat-related risks, as well as community offerings on a bulletin board.



- Sleeping two nights, maintaining some privacy while occupying a semi-public space.

The Red Cross provided a tent, Julius and I packed up whatever furnishings and items we had at home to create a makeshift space, and printed artifacts such as name tags and outfits with Hitze-Hilfswerk branding.

During the guerilla intervention we stepped into the role of “heat responders”, informed in the characters developed for the Heat Resilient Cities Conference 2039. In our characters, we improvised as we approached the attendees of the Welfare Congress.

A year later, I was invited by the CityLab Berlin to fill their mobile Kiezlabor – a mobile neighborhood lab inside a refurbished container – with content from the cooling center, reduced to the first two use cases (two minutes, two hours). For this, I created additional speculative communication elements and small rituals I performed inside, playing a heat worker, such as cooling center signage, a heat worker signup form, natural cooling instructions, and a brief heat care routine.



Outcomes

We set up a cooling center at the Welfare Congress of the German Red Cross. As heat waves have been getting more frequent, more intense and lasting longer; people, ecosystems and infrastructure are struggling from extreme heat. Especially in cities, where they get even more intense in the urban heat islands that form wherever buildings and roads absorb energy from the sun, traffic and people, and glow into the night. We already need cool spaces in summer months for the elderly, those with young kids, those living in attic apartments, poorly insulated buildings, and the unhoused. Trees, canals, parks are great for cooling down, even temporary street shades or a stop at the supermarket can help.



Temporary cooling spaces – like our tent – can be put up in parks during emergencies to provide additional capacity, and let people lounge around for a little longer. Two hours can help people recharge from the heat. It is enough time to surf, charge their phones, and work on their laptops. They could even sleep there for a few nights until their apartments cool down again, as the night is when our bodies need to cool down to regenerate. If people don't cool down during those “tropical nights” when the temperature doesn't drop below 20 degrees, it makes them more susceptible to heat-related illnesses and more irritable. Having paramedics and care staff would allow to provide medical care in case of emergencies. For instance, from organizations such as the International Federation of Red Cross and Red Crescent Societies – IFRC, Federal Agency for Technical Relief and other emergency and welfare organizations that our fictional HitzeHilfswerk (Heat Response Network) was modeled after.

Cooling centers are commonplace in many US-American cities. To my knowledge, our tent was the first one in Germany.





Use Case: 2 Minutes – Pick up Water and Information



Use Case: 2 Hours – Cool Down and Recharge



Use Case: 2 Days – Recover



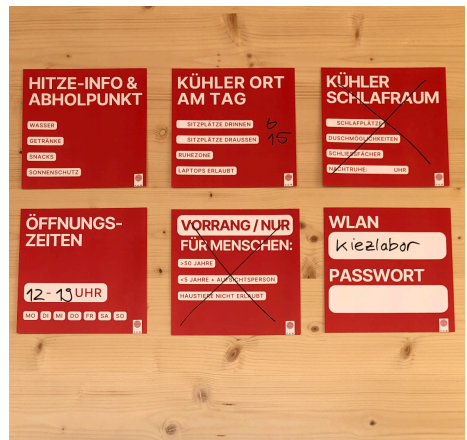
Reflection

Moving from speculation to reality. The first cooling center was more of a conceptual prototype, an artistic installation set up during the fall. It allowed for speculative exploration for what a cooling space could be. The second iteration, however, took the concept into a more tangible, real-world setting. By deploying the cooling center in a hot urban environment during the summer, it became a more grounded social intervention, constrained by practical realities like access to water and electricity, the temperature inside a metal container and location in a heat island by the tarmac of the former airport Fempelhofer Feld.

Understanding needs and behaviors. Simply creating a cooling space does not guarantee it will be used. Experience from cooling centers in the U.S. has shown that cooling centers might serve communities that already use those spaces, but they are rarely used by new visitors during heatwaves (Kaminer, 2010). In Berlin, a heat bus has been offering cooled sleeping spaces for the unhoused in the summer months (Deutsche Presse-Agentur, 2022). Our space has brought up practical questions about what people might actually do in the space for an extended period of time, how to deal with potential conflicts, and whom a cooling center might want to address. Research would be helpful to understand the attitudes, barriers and motivations around utilizing such spaces, especially among vulnerable groups.

Balancing artistic vision and practical impact. There is a tension between the artistic, speculative nature of the work and the desire to create a tangible, impactful intervention. The premise of the cooling center has proven compelling to get people interested, and cooling centers can be helpful measures to deal with extreme heat, I do not wish to suggest them as the only solution. Instead, I would prefer to shift the focus towards addressing underlying structural inequalities. Future iterations could more explicitly incorporate that systems-level perspective, using the cooling center as a means to highlight and address deeper societal issues related to heat resilience.

Allowing visitors to engage with the space on their own terms. The standalone cooling center created an environment where people could drop in for as little as two minutes or stay longer, without the pressure of structured programming or forced social interaction. This flexibility proved particularly important for visitors who might feel hesitant to ask questions or appear uninformed about heat-related issues. The quiet, contemplative nature of the space worked best when it wasn't competing with other activities or contexts – it worked well when it offered a quiet moment outside of a conference, better than when sharing space with other projects in a busy environment. This very limitation highlighted that sometimes the most effective way to engage with difficult topics is to create space for individual reflection and self-directed exploration.





HeatCon

Annual gathering for climate practitioners
to envision and embody radically resilient futures

2021-2023

Neue Gesellschaft für Bildende Kunst (GER), untitled.conference by Demos Helsinki (FI), Interaction 22 Conference (remote), a sustainability consultancy (DK), Kompetenzzentrum Kultur- und Kreativwirtschaft des Bundes (GER), Creative Impact Research Centre Europe (GER)

Project team: Juli Sikorska, Francesca Desmarais, Janna Jung-Irrgang, Jelka Wickham, Julius Falk, Ştefan Peca, Geoff Mills, Franziska Lindner, Rishikesh Tirumala, Dan Lockton, Stuart Candy (advisor)

Introduction

Humanity is on the brink of a weird and non-linear climate experimentation: our planetary thermostat is shooting up (IPCC, 2014; Mann et al., 1999), and we will have to adapt to a fast-warming, drastically changing world (IPCC, 2007). We are always behind – Europe is not transforming away from unsustainable practices and structures fast enough, nor adapting to the impacts getting more extreme year by year (European Environment Agency, 2023).

There are plenty of knowledgeable, talented, and committed people in climate policy and administration across Europe (“City Hubs,” n.d.). However, their options are limited by a lack of funds and accountability on their and higher levels of governance to make relevant decisions to save many lives. People in policy addressing climate resilience have the difficult task of engaging diverse stakeholders – from urban managers to civil society – to acknowledge and understand today’s problems and those that will manifest 20 to 30 years from now. They need to make them understandable and create empathy with the needs of those who will inhabit cities in the future. Some started using narratives (Strout et al., 2023), an approach previously used by community organizers (brown, 2017), climate fiction writers (Butler, 2012; Le Guin, 2011; Powers, 2019; Robinson, 2018; Wilk, 2019) and other culture makers (Candy et al., 2020; Furtherfield & Diehm, 2020; Superflux, 2017a) and researchers alike (Frase, 2016; Fry, 2022; Merrie et al., 2018).

This is futures and foresight work — but scientific climate scenarios won’t bridge the gap between foresight and transformative action. What we need are practices of imagination. Creative practices help bring distant, abstract futures to life. It is difficult to see what alternative worlds can look like unless we invest imagination and effort in exploring them and choose between one response and another. We need experiential climate scenarios for anticipatory governance to build preparedness and bring about transformations. And so we need to make room for creative and playful practices in serious government contexts.

Intention

Starting this work in 2020, my initial intention was influenced by my background in client-facing research and service design. I was used to uncovering a project-relevant research question with the client. This involved being out in the “field” getting my hands deep into people-centered research, ideally together with those who commissioned me. I would then return with a handful of insights to inform and inspire the design. I would share them with all the people deemed relevant for the project – including people with the ability to make decisions about the project – and come prepared with questions to decide on the most crucial aspects needed to move forward. The “design workshop” was less about designing what I was commissioned to do and more about avoiding decision paralysis and delay. The research provided information for all stakeholders and inspiration for the designers to make informed decisions. This phase also reframed the project, highlighting blind spots and topics the team hadn’t considered relevant. This helped redefine priorities before entering the design phase. Ideally, earning stakeholders’ trust and “buy-in” re-directed the project.

I abstracted this situation from service design projects to climate action efforts. What if I could gather decision makers and project teams around a metaphorical table, provide information and inspiration on how climate impacts might affect the organization and vice versa, and help make decisions better informed in how the activities of the organization affected climate change? Could this way sidestep decision paralysis, dealing with so many climate-related uncertainties, avoid delay, and accelerate transitions to carbon neutrality? In the past, creative practitioners had tried similar approaches, such as *The Future is Now* at the International Federation of Red Cross (Hazeldine & Candy, 2021) and Superflux’s *Future Energy Lab* (Superflux, 2017b).

I believed that some of the biggest levers of change would be in Europe and North America, which together contributed to 31% of global carbon emissions in 2022 (Global Carbon Project et al., 2023; Our World in Data, 2023).

My intention changed over time as I learned from previous experiments. Initially, I invited Francesca to merge our approaches from similar experiences and help design and facilitate a climate futures literacy workshop for a climate innovation NGO. From then on, we continued experimenting and collaborating on what would later become HeatCon. This happened first for a group of local creatives and climate practitioners, then for Europe-based social “change makers”, global interaction designers, and finally, a group of Danish sustainability consultants. In that session, scheduled as part of their international team retreat day, the sustainability consultants reflected that they could focus more on building climate resilience on top of their existing work in carbon neutrality. They suggested adding this to their business offering. Being part of their value proposition and a core business decision, this was one of the decisions we would have loved to see more of, and how they were translated into specific client projects.

We wanted to do more work with specific teams, but acknowledged that the “workshops” we were offering were something “wacky” without a clear value to either the business, existing goals or tangible pain points that organizations and the people inside them cared about. We had to prove something relevant for the project, gain trust, and define what “success” meant to us in ways that those organizations could relate to.

For our first experiential climate scenario – and first annual HeatCon, back then called Climate Futuring Weekend – we had developed a scenario narrative of a hotter, more resilient Berlin (Berlin-Neukölln 2039). The aim was to make cities more resilient to extreme heat, and identify sectors for organizations that the scenario would be most relevant for. We were hoping to find teams that have a specific project with decision-making capacities to host the scenario for – but we didn’t find such teams. Instead, we decided to make our own “team” of people who would be able to make a city like Berlin more resilient to heat. We gathered individuals from diverse, relevant fields for an experiential climate scenario called HeatCon.

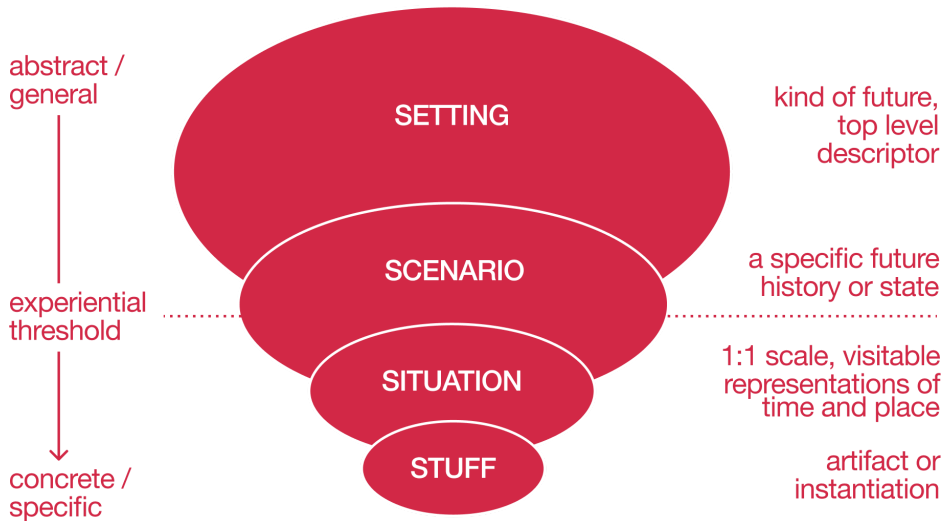
Why experiential climate futures?

Scientists and creatives alike have pointed out how it is hard to grasp the climate crisis (Ghosh, 2017) the need to facilitate emotional over intellectual engagement for such complex issues through immersion (Jain et al., 2019), and suggested using experiential futures to advance policy (Candy, 2010) to design for transitions (Lockton & Candy, 2019).

Traditional ways of responding to the climate crisis have been insufficient so far. **Transformative adaptation** (Pelling et al., 2015) goes beyond this and involves fundamental and dynamic changes in systems, structures, and behaviors to describe sustainability transitions. It recognizes that some changes may be so profound and pervasive that they require a transformative approach to cope with and respond to them effectively. Key features of transformative adaptation include: Systemic change, innovation, long-term perspective, participation and inclusivity, learning and flexibility, and multidisciplinary approaches.

Experiential futures allow us to step into a radically different world than the one we know today. It enables us to look at today's situations and (policy) design proposals to be compared and critiqued in the light of desired future states. For reference, see e.g. *Hawaii 2050* (Candy, 2016), *U.S. Earth Force* (Candy et al., 2020), *Imagination is a Commons* (Candy & Verbakel, 2022), and *Urban Heat Island Living* (Sikorska, 2022).

Experiential Futures Ladder (based on Candy, 2016)



Experiential futures bring participants inside a scenario, brought to life by futures-inspired versions of present design objects and/or by using creative methods such as immersive theater (Warren, 2017), live action role play (Stenros & Montola, 2010), games etc. to facilitate engaging with feelings, thoughts and ideas that arise within the scenario (Candy & Dunagan, 2017). They translate an abstract data-driven scenario to a concrete, tangible, embodied, immersive experience that helps to inspire imagination. Key features of experiential futures include: Concrete representations of the future, artifacts, creative methods, immersion, and reflexive contemplation of alternatives.

Design Research Question

This research was an evolving strain of experimentation on experiential futures for anticipatory governance with a climate inflection. It explored how European cities, such as Berlin, might radically adapt to the climate crisis, and transform. The question we explored and honed over the course of three years to envision and embody radically resilient futures, was:

How can experiential climate scenarios help climate practitioners to

- A. surface emotions about futures, and
- B. openly explore perspectives about barriers and opportunities that underlie assumptions about these futures?

Three iterations of HeatCon

We had three major versions of HeatCon, each with a different main intention. Additionally, there were different participants, processes, methods, agendas and outcomes for each of these iterations – as well as different names.

The final iteration of HeatCon, the process of developing the scenario, working with improvisation and a play structure to design the experience is closest to the process I'd like to replicate in the future. I consider the other iterations as milestones on that path, and I reflect on my learnings from each iteration for the next one to build on.



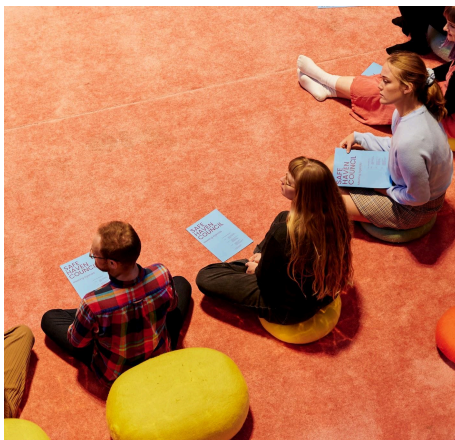
Climate Futuring Weekend

Creative writing and improvisational theater workshop to explore everyday situations from hotter European cities.



Heat Resilient Cities Conference 2039

Live-action role-play inspired immersive gathering to support heat action efforts with local stakeholders



HeatCon

Annual gathering for climate practitioners to envision and embody radically resilient futures



Climate Futuring Weekend

August 2021(a), Neue Gesellschaft für Bildende Kunst (GER)

September 2021(b), untitled.conference by Demos Helsinki (FI)

March 2022(c), Interaction22 Conference (remote)

April 2022(d), a Danish sustainability consultancy (DK)

Project Team: Juli Sikorska (2021 a, b, c, d), Francesca Desmarais (2021

a, b, c, d), Geoff Mills (2021a), Dan Lockton (2021b). Participants /

Scenius (co-creators, in no particular order): Summer Banks, Dan

Lockton, Linda Dedkova, Lisa Pettibone, Mille Knudsen, Hannah Ziegler,

Rama Reddy, Justin Zarb, Jonas Drechsel, Johannes Wirz, Michelle

Standley, John Robb, Richard Killiam, Amor Schumacher, Jake Wiest

Intention and Context

I wanted to explore imaginary worlds that look at how European cities might radically adapt to extreme heat. I invited Francesca to help build this imaginary world (see [Berlin-Neukölln 2039](#)). Together we created a scenario narrative, translated into a speculative transformation report and posters from speculative organizations. We hung them in public spaces (see [Urban Heat Island Living: Berlin-Neukölln](#)). Now, we wanted to bring this scenario to life and fill the world with stories, characters, and emotions.

Inspired by improvisational comedy (Salinsky & Frances-White, 2013) and the creative writing workshop *Beyond Dystopia* (Butler, 2020), I wanted to explore improvisational theater as a tool for imagining within the world that we created. Francesca, alternatively but relatedly, wanted to explore creative writing. We would bring both together in an immersive story-making workshop and a weekend of climate futuring. To help us facilitate the workshop, we invited the Berlin-based british actor, improviser and creative writing coach Geoff Mills. We knew we wanted to experiment with immersing participants in an imaginary world, and real-life immersion into a location. We would have a generative workshop with people who can bring in their own thoughts, emotions, situations, but also who can bring diverse imaginations.

I pitched [Urban Heat Island Living: Berlin-Neukölln](#) as an immersive urban intervention to *neue Gesellschaft für Bildende Kunst (nGbK)* and their art in public space open competition, *Art in the Underground 2020/21: as above, so below*. The curatorial project dealt with social biotopes and changes to urban habitats, focusing on the U8 underground line (Juan & Meiffert, 2022), and specifically the underground stop Leinestrasse around which the future scenario was centered, and where I lived. The curators were interested in how urban audiences – locals, passersby – can be engaged in the speculation in public space through large-scale communication materials and art education activities. The story-making workshop was initially intended as a tool to include more voices in the speculation and generate more stories and speculative artifacts, such as

posters for the intervention in public space. However, there was not enough time before production for new ideas to be included, consequently, this workshop did not inform other parts of the urban intervention, but instead served as an intervention itself.

We later iterated and hosted four sessions of the immersive workshop *Heat Resilient Cities Conference* in a digital format. The iterations developed organically, sometimes including a past participant as a collaborator or project partner. Those iterations are described further below.

Question

Having developed the scenario narrative Berlin-Neukölln 2039 and created fictional communication artifacts from that for the urban intervention Urban Heat Island Living: Berlin-Neukölln, we wanted to go a step further explore what it could mean to live an everyday life in that speculative world. We asked ourselves, **what situations could happen in a hotter Berlin some 20 years in the future, and how could we explore them?** To do this, Francesca and I organized a two day story making workshop with creative writing and improv theater. However, we disguised it as a conference on urban heat resilience, and invited creatives and climate practitioners.

Process

Working with my collaborator Francesca, we started out from a scenario narrative located within the Berlin district Neukölln (see Berlin-Neukölln 2039) and communication artifacts created for the experiential intervention Urban Heat Island Living: Berlin-Neukölln. Here, I describe the process of creating the experiential intervention that happened in parallel and led to the creation of the Berlin-Neukölln 2039 Transformation Report.

the neighborhood to identify suitable locations, such as a shopping mall by a large subway station. We identified six locations for our exploration: the shopping mall (for a cooling center), a park to place a cooling tent, a street with potential for cooling pavement, a cemetery-turned-park that is currently becoming an urban food garden, the park Tempelhofer Feld that could be turned into a forest, and the Genezarethkirche church that could become a coop center.



3. Designing and producing the storymaking workshop

We invited Geoff Mills to help us design and coach workshop activities. In a weekly call with the organizing team we would discuss ongoing questions and jointly make decisions.

SCHEDULE. We designed day one of the workshop around creative writing, and improv theater on day two. Each day would start with a brief immersion in the world in form of a fictional “Heat Resilient Cities Conference.”

OPEN CALL. We hosted an open call for creatives and climate practitioners and gathered 12 creatives each day. We chose people based on their interests, lived and professional experiences in skills we

found relevant to the change envisioned such as care and fermenting, as well as storymaking and imagination skills. The storymaking workshop was free of charge for participants. Acknowledging that imagination has long been an activity people would engage in in highly educated professions or their free time but that wage or care work would often get in the way of it, we offered every participant a symbolic honorarium of €30 per afternoon, as well as snacks and refreshments.

VENUE. We chose Kiezkapelle as a venue, a chapel within the former cemetery St. Thomas in Berlin-Neukölln. It was within the location of the scenario, within our small budget, and it would be inspiring to participants.

ACTIVITIES participants would find themselves in creative writing exercises, such as a dialogue between two people at solstice celebration or and a resilience worker monologue. Also, there were short-form improv activities, such as a playful interview of a new profession, sharing memories of the heatwave.

Example of a creative writing activity: Solstice Whispers

In pairs create an overheard conversation between two strangers, from different walks of life, at the solstice celebration. But first, set the scene. Are they dancing? Whispering during a performance? Naked and canoodling beneath a bush in the deepest reaches of the newly forested Tempelhofer Feld?

Example of an improv activity: The Hot Seat

Everyone remembers the traumatizing impact of the deadly heat waves of 2029, when almost 9 thousand people died and a further 72 thousand Berliners were hospitalized. This is the opportunity to tell your story. How do you know your partner, are they a care worker or heat victim, are you two arbitrary people brought together romantically in one of the pop-up tents, or perhaps an emergency care manager politician. Where were you and what were you doing? Did you know each other before? Have you stayed in touch? How did the experience change you? You will establish a story and a relationship and present to the rest of the group, who may

prompt you with questions. Some of the story you will have established, other elements may be improvised and developed between you as the story unfolds.

4. Hosting the storymaking workshop

Sixteen participants came to the Climate Futuring Weekend, 12 for creative writing and 12 for improv, with significant overlap between the two. Each day lasted 4 hours and started with an immersive introduction to the Conference. It was followed by creative activities, and ended in a debrief for emotional care where participants each shared an emotion they felt and contextualized their experiences through a brief explanation of experiential futures and their role in the climate crisis.

5. Translating an in-person immersive workshop into a virtual setting

After the original *Climate Futuring Weekend*, which was disguised as the Heat Resilient Cities Conference, I recreated the storymaking workshop in a digital format. It was inspired by the use of digital documents sent via Zoom chat in the online experience *The Verdict* (Logic Locks, 2021) as well as the making of self-guided maps on Miro, a collaborative digital platform, in the virtual immersive storytelling experience *Where there's smoke* (Weiler, 2021). We invited a former participant from the *Climate Futuring Weekend*, Dan Lockton, to co-create and facilitate the first digital *Heat Resilient Cities Conference*. I designed a virtual version of the Heat Resilient Cities Conference based on a virtual map in Miro, and Francesca and I jointly re-designed the immersion and activities for an online setting.

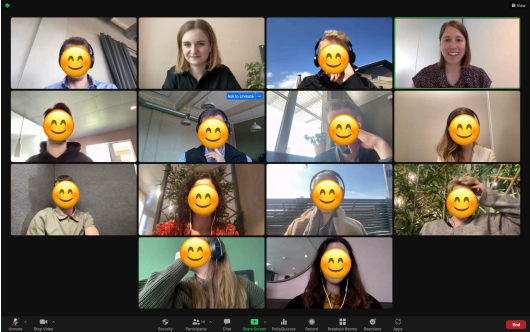
Iterations of the Heat Resilient Cities Conference 2039

We worked with incremental improvements to iterate the immersive workshop format, and turn it from a creative workshop to a curated set of activities under the disguise of a make-believe conference in a hotter European city.

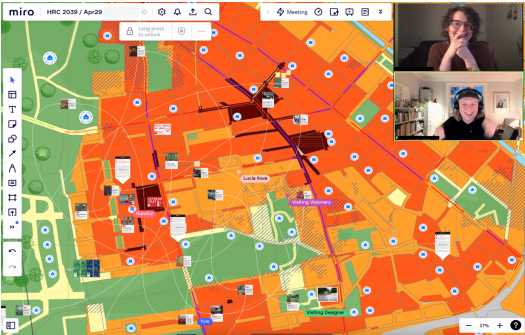
Kiezkapelle	untitled.festival	Interaction22 Conference	Danish sustainability consultancy
DESIGN QUESTION			
Can we write short stories and improvise situations in a speculative world set in a hotter Berlin some 20 years in the future?	How can we translate the speculative conference format into a virtual setting?	How can participants navigate through the experience in a virtual format?	How can we design an intentional experience for a team of Scandinavian sustainability consultants?
VENUE			
Kiezkapelle	Remote, eco-social transformation festival	Remote, global design conference	Remote, internal company / team day
PARTICIPANTS			
Creatives (creative writers, improvisers/actors) and climate practitioners; Based in Berlin	Social change makers, transformation workers; Based in Europe	Interaction designers International; based mostly Central America and Europe	Sustainability (carbon neutrality) consultants; Based in Denmark
MAIN DESIGN FOCUS / CHANGES			
Designed an immersion session + 2 days of activities in creative writing and improv	Translated physical immersion and 2 days of activities into a virtual space (miro board) and curated activities for a 3 hour session	Re-designed the virtual space (miro board) for a more maps-based virtual experience	Re-designed the intention for the event and designed a debrief specific to the participants and their context
DURATION			
2 half-days (incl. debrief)	3 hours (incl. debrief)	3 hours (incl. debrief)	3 hours (incl. debrief)



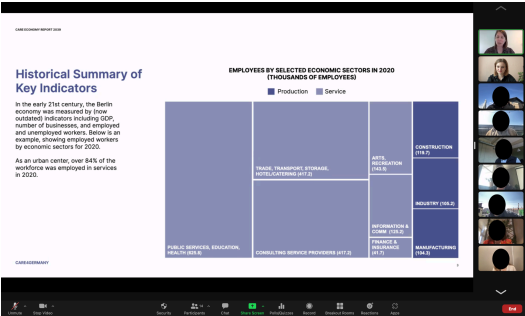
Kiezkapelle
July 2021



Untitled.festival
September 2021



Interaction22 Conference
March 2022



Danish sustainability consultancy
April 2022

Outcome

We designed two versions of the experience, one was in person and the other remote. Some of the activities participants would find themselves in were a facilitated “time jump”, experiential introductions, memoir from a heatwave, conversations at a cooling center, physical and digital site visits to locations of change, a letter to a more-than-human-friend, a new economy start-up/co-op assessment, regenerative solstice, and a final delegates’ assessment. The activities concluded in a guided return and debrief.

Sixteen participants joined the first *Climate Futuring Weekend*, and around 65 including all four iterations and the playtests. After the narrative-based experience we conducted a debrief for emotional aftercare to help people uncover which aspects of the scenario they found desirable and which not. This helped us understand what their assumptions of the future are, and to finally contextualize the time-travel experience as a form of climate action through shaping collective visions of the future. For a team of sustainability consultants, we co-designed a custom debrief with one of the consultants to include further sense-making relevant to their projects.

The in-person Heat Resilient Cities Conference was a non-linear story making experience where participants were initiated into a fictional conference on responding to extreme heat. In a curated set of creative activities, they were free to jump back and forth in time and characters to explore that world and generate stories and memories from it.

The virtual *Heat Resilient Cities Conference* was a map-based experience where participants followed a guided exploration of a speculative future history along a heat map of Berlin. A curated set of activities prompted them to fabricate memories from events such as an extreme heat wave and a solstice festival. This showed both the impacts of the climate crisis in Europe, as well as ways to adapt and transform.

Emotions and observations people shared. In the debrief and later conversations, participants mentioned feelings of hope, kindness, loneliness, shame (as their character), worry, fear – often these emotions were felt at the same time. One participant said that “there were sad stories of death, but we were not dwelling on it. It’s not hopeless to continue. It’s stories of people dealing with it.” One participant shared an ambiguous feeling they couldn’t yet put into words and described as “green.” The experience also caused frustration when assumptions of the future clashed: “I had built up a world in my head, this brought out a lot of anger.” Generally, participants expressed content with a mix of utopia and dystopia: “not the classical either-or dichotomy, but an in between,” and that the scenario was “grounded in our world: politicians, relationship problems, we can relate to it.” Some people shared feelings of cognitive dissonance playing a character who treated a patient whose political views they were opposing, while the condition they were treating, namely heat exhaustion, was related to the patient’s job, such as working for a budget airline. Another participant enjoyed playing “the bad person,” an anti-hero in the narrative. One participant wished “we could have created more love stories.”

What people said

“Heatwaves are a disaster we have never experienced [in Europe]. I had missed that before”

–participant, in person

There was a feeling of fear: Will it really happen this fast? I am scared of change, we are just coming back from the pandemic”

“So eine Art Angst: Wird's wirklich so schnell passieren? Ich hab schon Angst vor Veränderung, wir kommen gerade erst aus der Pandemie zurück.”

–participant, in person

“I felt loneliness. What does heat do? It separates us, you don’t want to be close to other people.”

–participant, in person

“We are creating positive images of the future. The heat can just come, we will handle this.”

–participant, remote

“[The world] has power struggles, relationships, ongoing trauma of heat: Like the Spanish flu back in 1918-19, would people now even want to talk about it? What kind of scars would still be present? Even in the scenario, you never know what other people may be going through.”

–participant, in person

“In one minute I feel this hope, because I can see how things might happen. [Then I see] whoever dies in the heat waves. Also have so much anger, grief. Most organizations are not discussing the topics they have to discuss.”

–participant, remote

“[We could include] visioning as part of our work. We do an analysis, but then we need to match it to where we want to be and formulate it.”

–participant, remote

“What I miss is positive visioning. There is so much of ‘the world is on fire and we are going to drown’, there is not a lot of room for the solutions. Even if we compare it to the pandemic – [though] there was not that much gloom and doom for the pandemic. What are the useful adaptations, what are the upsides, what can we learn for modern society”

–participant, in person

“A lot of new concepts emerged. ‘The Lost Generation’ is a new concept that I had not thought about before. Letting these concepts bubble up and being able to build on them afterwards.”

–participant, remote

“[I had to] force my head to be 20 years from now. Such a challenge to not be in today. A mental transition.”

–participant, remote

“It was powerful to have someone check me in at registration people being firm about [Covid] testing. Made it feel like a real conference”
–participant, in person

“I thought it was totally amazing, from naught to sixty. A totally intense and emotional conversation. The community. The only thing missing was another 15 minutes to stay there, like “Who are you? Shall we connect via LinkedIn? There was a common spirit there. Above all, it resonated with the people who were there.”

“Ich fand es total krass, so von null auf hundert. Ein total intensives und emotionales Gespräch. Die Community. Was am ehesten noch gefehlt hat, wären noch 15 Minuten um da zu bleiben, so “wer seid ihr eigentlich?” Wollen wir uns über LinkedIn verbinden? Da war ein gemeinsamer Geist da. Das hat vor allem resoniert, mit den Menschen, die da waren.”

–participant, remote

“As someone who hasn’t done much with climate change, [...] I have been theoretically aware, but never before engaged with it. Now I’m tuning in to articles and politicians – when you know the situation, you wonder why not everyone is engaged with it. It’s quite alarming and we are running out of time. And it didn’t really happen [for me] until I was planning the activities – it was an idea or concept only, tied to the activities. It wasn’t until the workshopping and engaging with others and then sharing, late into the process.”

–Geoff, performer/writer and collaborator

Reflection

The Climate Futuring Weekend disguised as the *Heat Resilient Cities Conference*, and three subsequent remote iterations, uncovered situations that could happen in a hotter Berlin some 20 years in the future. It addressed people remembering a deadly pan-European heatwave, encounters at a cooling center of potentially embarrassed parents and their toddlers, celebrations of the seasons, and transitioning jobs as part of the Berlin Care Economy. We explored them first openly through improvised scenes and creative writing, and later through a curated set of activities around a certain set of future events.

Focusing on the reflection. Over the course of the iterations, we noticed that some participants viewed the solutions as a beacon of hope. Meanwhile, Francesca and I were considering how we can let people experience the heatwave and the transformation of the economy without falling into the same traps we saw in our daily lives. For instance, designing resilience solutions that merely accelerate capitalism. This approach wouldn't solve the problem, rather, it is part of it. We recognized a strong need for reflection, and for people to engage with a cautionary tale in a safe space.

Open ended. We wanted to avoid defining the outcome of the workshops; we didn't want to impose ideas about whether the world is bleak, hopeful, or anything in between. At this time, our best approach was to provide ongoing input and prompts to guide participants through the experience of the heatwaves and their aftermath. This would allow them the space to process without needing to make decisions or produce outcomes right in the moment.

Gamifying extreme heat? Creating heat-related experiences is a significant challenge, requiring a more sensitive approach than designing most immersive experiences, such as escape rooms or popular live-action role plays (larp). We have drawn inspiration from Nordic Larping (Stenros & Montola, 2010) traditions, which emphasize deep emotions and emotional after-care practices. Conversations with

experience and escape room designers highlighted the importance of focusing on key moments that allow participants to engage meaningfully. When participants can influence outcomes, it has a significant effect – even as a minor calamity like “the AC just broke, what do we do now?” The designers suggested introducing controversial topics to provoke decisions in a group. However, we found it important to avoid creating us-versus-them dynamics that are already present in public debates on climate and other topics. Addressing emotions like fear requires a distinct approach compared to horror experiences that people engage in for the adrenaline and an emotional release. In contrast, the fear experienced in this context is very different exactly because it is grounded in reality and may lead to anxiety and panic rather than excitement. One designer even expressed reluctance to deal with the topic of extreme heat, as it felt too real and too painful to confront. I still believe it is important to address it, to be intentional about why and for whom we make it, how to contextualize the experience and offer emotional care.

For whom? Some participants from outside of Europe, especially South America and Southeast Asia, have expressed frustration and anxiety over the scenario speculating on heatwaves in Europe, while they are commonplace in other places. This is a topic the team have discussed internally, and aimed to connect it to real heatwaves and other emergencies in the Global South through the scenario narrative. And yet, many Europe-based participants shared having a powerful experience like this for the first time. Extreme heat requires a lot of sensitivity, and I don’t believe that this particular experience is for everyone, but rather for people who have not experienced extreme heat or another emergency in such a way themselves. In future iterations, we aimed to be more explicit about our intentions, give trigger warnings, and focus on offering emotional care.

Experiential setting. We explored other ideas for an experiential setting (I later discuss experiential settings under “premise”) and chose the conference format as it would allow participants to play different roles as delegates, or at least a heightened version of themselves. We had also considered a real heat response preparedness training. Additionally we

considered a planning and decision making process for government officials. We did this because, according to Eric Klinenberg, author of *Heat Wave A Social Autopsy of Disaster in Chicago* (2015), the emergency response to the heatwave in Chicago in 1995 was stopped by a lack of government action. Also, we considered an imaginary design studio to respond to the transition –which later turned into Urban Heat Studio – and a writers room to communicate the transition in fictional stories.

Who can afford to join. In the first *Climate Futuring Weekend*, we were still generating ideas for an experience and it was important for us to gather a diverse group of people as their ideas and values would shape what we collectively imagine. As many people before us have pointed out, we were aware that it can be a privilege to engage in futuring. In order to lower that barrier, we offered participants a symbolic incentive of €30 per afternoon for their participation, and offered snacks and refreshments throughout. This was initially met with skepticism, as the project partner was worried we would pay our friends, but we explained the intention. Ideally, we would have loved to involve a more diverse group of people in making the scenario and offer a higher incentive that would be equivalent to the price of waged work or care work.

Level of co-creation. We wondered at what point in the scenario narrative making process to involve people – what is the level of “done” at which to include them in the scenario, and what should be filled in by participants? We chose to present a completed world that participants could fill with their stories and experiences. We saw this as an opportunity to exercise what Priya Parker calls “generous authority” (2019).

Clashing assumptions about the future. One participant was frustrated with the care jobs guarantee in the scenario, as they had personally imagined (and hoped) for an universal basic income. This briefly brought them out of the experience. For future experiences, we considered starting with a session to share assumptions about what participants think the future might look like.

Eliciting emotional engagement, not a certain emotion. People shared feeling surprised "it" would come so soon ("heatwaves of 2029"), uncomfortable, others hopeful. Rather than trying to elicit a specific emotion in their experience, we wanted participants to have an emotional response.

Invitation to spin-off. From the beginning, we made materials available to participants for them to build on top of this world and create their own experiences. Two participants from the first story-making workshop have since been working on heat-related performance formats. At the time of writing this, they have performed twice, most recently at Berlin Science Week (Banks & Schumacher, 2024). One visitor came to see the outcomes of a workshop I taught at the University of the Arts in Amsterdam was inspired to design his own climate-related time-travel experience as part of a workshop they hosted.

Hope, misplaced? When participants have expressed hope, I noticed that some felt hopeful about specific aspects like building community, while some others conveyed a more general sense of "we can handle this." We had previously concluded that we didn't want to dictate what emotions we want people to experience, but rather to focus on the fact that they are feeling something. However, I questioned when "hope" might be misplaced. I considered how we could enhance a specificity towards hope, reflecting on designer and futurist Anab Jain's concept of "active hope" and how we navigate complex interconnected challenges while still showing possibility (Haldane, 2024).



Heat Resilient Cities Conference 2039

Live-action role-play inspired immersive gathering
to support heat action efforts with local stakeholders

August–October 2022, Kompetenzzentrum
Kultur- und Kreativwirtschaft des Bundes (GER)
Project team: Juli Sikorska, Janna Jung-Irrgang,
Julius Falk, Francesca Desmarais

Context

I pitched this intervention to the Creative Lab #4: Climate Futures at the German Government's Centre of Excellence for the Cultural and Creative Industries (*Kompetenzzentrum Kultur- und Kreativwirtschaft des Bundes*). The goal of the Creative Labs has been to offer impetus for open-ended innovations. They are set up temporarily as digital innovation spaces and are dedicated to current economic policy issues. These include structural change, the climate crisis, structural discrimination and digitalization (*Kompetenzzentrum Kultur- und Kreativwirtschaft des Bundes & Initiative Kultur- & Kreativwirtschaft der Bundesregierung*, 2022).

As the Creative Lab and the suggested intervention with German policy makers would be in German, my collaborator Francesca and I jointly defined the intentions for this project. As Francesca doesn't speak German, she moved into the background and I assembled a German-speaking team.

Intention

Before the project started, Francesca and I discussed our intentions for this project. As this would be the first in-person intervention since the Climate Futuring Weekend, we would have to translate the activities from a heavily-facilitated online map-led experience and design an in-person, site-specific experience flow and space.

We were still mostly interested in the return from the experiential situation into the real world, and how we can facilitate emotional processing and sense-making. We had learned that it can be emotionally tough for people to work with this. We were curious about how we might open people up to it, show possibilities. We asked ourselves: are there things that we can look forward to?

Though we were hoping to iterate the experience a couple times, we knew this might not be possible because of the time constraint of the

12-week process while making big changes and assembling a new team. Our goal was to increase the fidelity of our understanding, not the artifacts. As such, we focused on two playtests before the final experience, and chose to prioritize the policy world over civil society in our research and experience design.

Partnering with a government agency, this was an opportunity to better understand the policy context and the people working there that we have been looking for. It also allowed us to experience the scenario with those who shape climate-related strategies and to get their expert opinions on it. We were a little anxious about how people in policy would respond to the scenario. We had learned so much from designing the first scenario and changed our perspectives about the type and scale of change that would be needed but it was a process – when we started out, we did not envision suggesting to dismantle capitalism and asking for a massive state budget to do so, as Francesca pointed out in a previous reflection.

We did question what we expected out of working with government and policy people, and whether we should rely on policy to push the needle on climate adaptation. We believed that there are things that need to happen, and they need to happen fast, and many of them are very technical. However, the people we elect, and those who work with them, are often passionate people who may need an extra bit of care, inspiration, and imagination.

Hypotheses and Question

Living in a European city like Berlin, London, or Vienna, the slowly spreading implications of the climate crisis may be hard to spot if you don't know where to look. Demands for a climate-neutral city may seem like a necessity¹⁶ (Klimaneustart Berlin, n.d.), but an abstract one; what exactly is it that we're trying to prevent, and what is the everyday life we are asking for?

We wanted to give people a glimpse of what it means to live and thrive in a hotter city in Europe. There are many written scenarios out there, and some scenario exercises too. However, many still focus on analytical and intellectual arguments and fail to include that living in a hotter world already is and will be, first and foremost, an experience of everyday life. So we knew we wanted to engage people emotionally – the only way to truly get people on board (Jain et al., 2019).

We had previously looked at what happens when a European city radically adapts to extreme heat. We explored scenarios such as the “Shared Socioeconomic Pathways” (O'Neill et al., 2017), looked for seeds of change, imagined worlds very different to today (Berlin-Neukölln 2039), and put up posters in the streets of Berlin (Urban Heat Island Living: Berlin-Neukölln). This time we wanted to get even closer to everyday life. We wanted to see how people who shape and live in cities react to the effects of extreme heat, and transformations that would help a city radically adapt.

The Global North underestimates the magnitude of the climate crisis (Khasru & Ambrizzi, 2023) and how deeply and intensely it is affecting us today and will more so in the future. We assumed that we would need to create the conditions for an emotional experience of local climate impacts

¹⁶ Between 2021-2023, the Berlin-based grassroots organization KLIMANEUSTART organized the referendum 'Berlin2030' to make Berlin climate neutral by 2030, rather than the current plan of 2045. www.berlin2030.org

and the interconnected issues to truly acknowledge the severity and wide-reaching implications of the climate crisis, and to change course.

In the scenario narrative Berlin-Neukölln 2039, we had already looked at what it means to live with the climate crisis in European cities. The “worldview conflict” hypothesis suggests that people tend to defend their worldview when they feel questioned or challenged, and show resistance (Brandt & Crawford, 2020). Futurists alike have suggested that immersive interventions can offer invitations to loosen their grip and open up to radically different alternatives (Hazeldine & Candy, 2021). **How do we process sometimes difficult emotions that arise when our deeply held worldviews are challenged?**

Future visions shape our actions today (Candy & Kornet, 2019), so much that researchers suggested they should be placed at the center of sustainability research (Willow, 2022). **How might we realign our actions towards more resilient, equitable lifestyles?**

To explore this, we hosted a make-believe conference – a climate scenario exercise in disguise to facilitate emotional processing, and designed a debrief that would help to realign our actions. We invited people to a conference set in a hotter Berlin, when heat waves have become much more frequent, more intense and last longer.

Research Process

Together with the team, I followed a practice-based action research approach where we conducted research *for* design (steps 2-4) and *through* design (5-7). For outcomes of the process, see [Key Design Elements \(and Decisions\)](#).

Process Overview



1. Onboarding and setting an intention for the intervention

To get the newly assembled team onboarded quickly – and experientially –, Francesca and I hosted a remote *Heat Resilient Cities Conference*. With the team, we used the debrief to focus on questions that remained unanswered, and to discuss the intention for this second generation of the Conference. Inspired by our latest climate scenario exercise with a Danish sustainability consultancy (see [Iterations of the Heat Resilient Cities Conference 2039](#)), we wanted to find a specific use case, and a team of people to whom this might be particularly useful. For example, a team at the beginning of a new project related to climate adaptation, and the ability to implement changes (e.g. a budget available, a strong personal network or social media following, etc.). We assumed that this might be people working on, but not limited to, healthcare, urban

4. Understanding the contexts, challenges, and needs of local stakeholders

To better understand the current situation of climate (adaptation) policy work in Germany, why local transition projects get stuck, and what people working in that space need most right now, we conducted desk research and expert interviews with people in the broader heat adaptation and policy space. To reach those experts, we first conducted calls with people from our networks who could point us to experts, and then conducted in-depth interviews with three experts in the space: a researcher on extreme heat and healthcare, a leader of emergency operations at the German Red Cross, and a government official working on transportation safety. We synthesized our findings and uncovered insights around three themes: current state of heat resilience, challenges and opportunities for local change towards ‘deep resilience’, and the needs and wishes of those people.

5. Designing the climate scenario exercise, and tools to facilitate sense-making for participants

We redesigned the previously remote experience into an in-person event, working with the spaces inside the church, our venue, adding a surprise element at the beginning of the experience common in larp. In which, we would simulate a power cut to get everybody into a new reality quickly, sensory elements such as the scent of burnt wood that would resemble the smell of wildfires, and adapting the activities and designing new ones to create a new event flow, for which we wrote a first immersive script. We added new elements to the scenario narrative, and new headlines to our speculative [Berlin-Neukölln 2039 Transformation Report](#). For which, we designed an exhibition to install inside the church, alongside with other artifacts such as a Care Economy Report, and set elements such as banners hanging from the gallery.

We focused on designing the debrief to facilitate the return from the scenario into everyday life. After conversations with three experts – two futures practitioners and a larp designer – we considered a classical

backcasting workshop. This would end in a specific activity participants could do the following day when they got to their desks, over hosting a conversation to negotiate inter-generational contracts, to a personal reflection that would focus on emotions. We decided to split the debrief in two: Host an in-person debrief to reflect the experience and give space to emotions, and a second one, two weeks later, to connect it to everyday personal or professional activities.

To test the flow of the experience with new design artifacts and the debrief, we ran a playtest two weeks before, but in a different space as the venue was not available to us. The main takeaways from the playtest were to refine the goal for the experiential situation, replace an activity related to the final section of the timeline, and give more flexibility to the flow of the experience and more freedom to participants interacting. Additionally, we decided to give people roles, which we were initially hesitant about. Together with two registered participants who we knew were experienced in tabletop role playing game design, including a returning participant, we designed 25 characters of people who might have a relevant perspective from the speculated world. These characters were inspired by the real challenges and personalities we heard about during our research. We only had the space available to us the day before the event, which is when we installed the exhibition and had a final walkthrough through the script and the space.

6. Facilitating an experiential climate scenario with local stakeholders as an intervention

Twenty participants showed up to the climate scenario exercise, including one last minute joiner, who called me the morning of the event as that's when she got the email forwarded from a coworker. The event lasted six hours, including a briefing, the live action role play, including a break for lunch, and a sense-making debrief. For an overview of the briefing and activities, see [Key Design Elements \(and Decisions\)](#). A big surprise was the opening activity *Remembering the Heatwaves* in which participants were prompted to fabricate memories from a future pan-European heatwave, when they started connecting their input to the characters they

were given and adding on top of one another. An activity that was intended for 20 minutes lasted nearly 45 minutes, and as it was such a welcome surprise that we let it happen.

7. Facilitating sense-making for all involved

As the intention was to focus on the emotional experience, and not move into analyzing too soon, we split the debrief in an immediate debrief and an offboarding reflection. For an overview over the two sessions, see [Key Design Elements \(and Decisions\)](#). We took notes during the reflection, and asked participants for consent to do so. See [Participant Reflections and Emotions](#) for more.

Outcomes and Insights

In the *Heat Resilient Cities Conference 2039*, it has been 10 years since the pan-European heatwave that disrupted public life all across Europe. Together we are revisiting the decade of change that has followed. Delegates are here to share personal memories and experiences, and express their wishes for the next years, to contribute to the Transformation Report 2039 (see world in Key Elements (and Design Decisions)). The year 2039 is arbitrary, but the events in our future history are not. We aren't trying to predict, but to anticipate and design for transitions. Each provocation has been crafted to paint a picture of a city addressing interconnected crises.

To support the emotional journey, participants received roles – from a heat responder working in the cooling tents in the park down the road, to a forest caretaker for the newly rewilded Tempelhofer Forst, to a tech worker whose company is about to be phased out. They were invited to flesh them out with personal bits and pieces. Each character came with a background story, a motivation, and a task for the day. This was inspired by real-life challenges of those whose roles would be crucial in our world, from people that had previously talked to such as climate medicine experts and emergency response managers, elected city officials responsible for public spaces and urban planners, facility managers, and those transitioning away from tech.

On a morning at the end of the hot half of the year – in October 2022 –, we met in our fictional Co-Op Center at our location, a church once heavily destroyed during World War II. By 2039 it would be transformed into Tempelhof Forst.

This design research process led to the Key Design Elements (and Decisions) and Participant Reflections and Emotions. It had three main outcomes:

- Gathered an initial network of people who have the potential to make Berlin more heat resilient.
- Identified some current challenges and opportunities for local change towards “deep resilience.”
- Exposed people who work on cities* to the effects of extreme heat in a role-play scenario exercise and reflected with them upon their experiences.



Key Design Elements

I synthesized the key elements of our experiential climate scenario, for two reasons:

1. Describe the experience and what it consists of.
2. Identify the most relevant decisions we'd take as we designed each of these elements.

I explain the elements roughly in the order that we dealt with them in the process.

INTENTION. Get an existing team working on a project together, or a group of people who would be able to build resilience to extreme heat.

NOMINATION OR REQUESTING AN INVITATION. People interested in joining could request an invitation or nominate someone else by answering a couple of short questions regarding their experience. This includes personal, lived experiences, as well as professional ones and intentions. This would help us curate a group to gather with intention.

LOCATION. We gathered at start.bahn, a community space within the Genezarethkirche church in Berlin-Neukölln. The church itself played a role in the scenario narrative as a Co-Op center, and in itself it's an inspiring location with multiple spaces that allowed us to host a site-specific experience.

RESEARCH INTERVIEWS. To better understand the current situation of climate adaptation policy work in Germany, why local transition projects get stuck, and what people working in that space need most right now, we conducted expert interviews with people in the broader heat adaptation and policy space. Among other people this included a researcher on extreme heat and healthcare, a leader of emergency operations at the German Red Cross, a government official working on transportation safety. Some of our interviewees later joined as participants as well. The insights uncovered during those interviews informed the design of the experiential climate scenario.

CAREFULLY SELECTED PARTICIPANTS. We intentionally gathered an ad-hoc group of 21 people who would be able to create resilience to extreme heat. The people we gathered included people working in heat health (KLUG), social welfare (Red Cross, Hitzebuss/Heat Bus), urban green & planning (municipality, urban planners, district planning), policy and administration (municipality, state of Berlin, Green Party), and people working manual and creative jobs (a facility manager, community manager, musician, historical tour guide). All of these contributors were from Berlin.

THE INVITATION. Each participant received an experiential invitation via email to join the *Heat Resilient Cities Conference 2039*, including a conference ticket, the Berlin-Neukölln 2039 Transformation Report as an introduction to the world, the task for delegates during Conference to raise the stakes, and a request to confirm their participation. If there were any doubts, I personally called or emailed them to explain in out-of-world words.

FIRST IMMERSIVE STRUCTURE & SCRIPT. We chose the format of a live action role play (larp) to facilitate an emotional experience, rather than the analytical experience that people may have when they engage with climate science or hear about recent events. Additionally, we distributed roles (see below) to let people step into the shoes of a fictional character and explore their perspective, contributing to the emotional experience.

To facilitate the immersive experience, the team worked with an immersive script that included all activities and performance elements. For example, these included monologues, dialogues, improvisation, locations, direction notes, sound, light and the other sensory experiences, such as the smell of burnt wood.

ROLES. In larps, roles can help create distance to everyday personas, and can help participants get over the resistance to a make-believe reality. We defined 25 roles (for a maximum of 25 participants) to represent people and perspectives that would be relevant in the scenario narrative. Each role included a brief backstory, the main motivation

driving their character, and a task for the day. Each role came with two questions for participants to fill in, to adapt their characters as they liked.

As there were three speculative organizations that “hosted” the conference, we assigned each role to one of the three organizations as a delegate, and each of the three facilitator-performers represented one of them to gather the delegates. For every participant, we thought about their current role and what it might turn into. We recruited participants and assigned the roles accordingly, offering to swap roles if anyone preferred. Participants received their roles about a week before the event.

Heat Response Network (Hitze-Hilfswerk)

- Volunteer Coordinator (Freiwilligen-Koordinator*in) – Facilitator.
- Head of Heat Emergency Operations (Einsatzleiter*in von Hitzeschutz-Notereinsätzen)
- Heat Worker (Hitzehelfer*in)
- Representative for South Pacific & Oceania (Vertreter*in für Südostasien und Ozeanien)
- Nanodegree Education Designer – Climate Health
- Translator for Neighborhood Coordination (Übersetzer*in für Nachbarschafts-Koordination)
- Representative for Retiree Well-being (Vertreter*in für das Wohl der Senior*innen)

Neukölln 2040

- Designer for local transformations (Designerin für lokale Transformationen) – Facilitator
- Common Good Accountant (Gemeinwohl Buchhalter*in)
- Forester (Forst-Pfleger*in)
- Future Generation Commissioner (Vertreter*in für zukünftige Generationen)
- Representative for Tempelhofer Forest, Hasenheide and Urban Nature (Vertreter*in für den Tempelhofer Forst, Hasenheide und Stadtnatur)

- Carbon Credit Banker (Carbon Credit Banker*in)
- Mayor (Bürgermeister*in)
- Post-growth urban economist (Postwachstum-Ökonom*in)

Care4Germany

- Guide and Representative for New Cooperatives (Begleiter*in & Vertreter*in von Kooperativen in Gründung) – Facilitator
- Patron of the HRC Conference 2039 (Schirmfrau*herr der HRC Conference 2039)
- Nature Art Cultivator (Naturkunst-Schaffende*r)
- Co-owner of a bakery cooperative (Mitbesitzer*in einer Bäckerei-Kooperative)
- Repair cafe cooperative representative (Vertreter*in einer Repair Kooperative)
- Housing cooperative representative (Vertreter*in einer Wohn-Kooperative)
- Brewery co-owner (Brauerei Mitinhaber*in)
- Shadow building official (Schattenbau-Beamte*r)
- Tech worker
- Facility Manager

We designed the character sheets with roles in a way so they could be filled in and folded as name tags. We included blank space for reflection notes during the debrief.

**HEAT
RESILIENT
CITIES
CONFERENCE
2039**

HITZEHELPER*IN

In einem Satz:
Was hast du heute erlebt?

Das ist deine Rolle für die Conference. Betrachte sie als eine Einladung – als Inspiration, die dir helfen kann, eine starke Meinung und Perspektive zu vertreten. Die Inhalte sind flexibel – ergänze und passe an, wie es dir gefällt.

Anne

Hitze Helfer*in

Eingeladen für Hitze-Hilfswerk

Deine Geschichte

Du betreibst mit deinen langjährigen Freunden aus dem Medizinstudium in Berlin eine solidarische, nachbarschaftliche Praxis. Dort versorgst du deine Mitmenschen mit ärztlichen Dienstleistungen und leistest Aufklärungsarbeit zu den Folgen und Gefahren von Hitze. Für ein paar Wochen im Jahr machst du dich dann auf in den Außeneinsatz und ziehst als freiwillige Helfer*in des HitzeHilfswerk von HitzeWelle zu HitzeWelle, um Cooling Center zu betreiben.

Was dich bewegt

Vieles ist nach wie vor nicht bewusst, wie schwer und gefährlich Hitze gerade für ältere oder kranke Menschen ist. Wenn dieses Bewusstsein weiter verbreitet wäre, könnten wir viele schwere Hitzefälle vermeiden und die Menschen besser schützen. Es ist halt wie immer, nur wenn es zur Katastrophe kommt, wird dann panisch gehandelt und die vulnerablen Gruppen werden vergessen. Das ist für dich einfach unverständlich so leichtsinnig mit dem Leben unserer Mitmenschen umzugehen.

Dein Ziel

Für das Projekt "Vorsorge statt Nachsorge", das du innerhalb des HitzeHilfswerks mitgegründet hast, suchst Du Verstärkung.

Dir gefällt der Ansatz der Fürsorge-Ökonomie und Du möchtest gerne von Care4Germany mehr Unterstützung und Jobgarantie-Ressourcen für deine Praxis.

Was hat Dich dazu gebracht, über die Langzeitfolgen von Hitze nachzudenken?

In welcher europäischen Stadt war bisher dein HitzeHelfer*in Einsatz besonders herausfordernd?

Example of a role: Representative for Tempelhofer Forest, Hasenheide and Urban Nature

Your Backstory: After the high point of your political career (and the associated stress!) as the Mayor of Neukölln, some years ago, you were appointed to your current role by the City. Prior to being Mayor, you were responsible for administrative tasks associated with green urban spaces, so you've had a lot of experience in this field. Now you see your role as advocate and evangelist for the rights of nature within urban spaces.

Your Deal: Freed from the political pressures, stakes and ambition of your earlier career, you now enjoy a position where you don't need to serve the interests of others to gain advantage. Instead, you're able to pursue your own, very specific agenda. You enjoy talking to young people, going to joyful events again – such as this one – and you relish a role where your opinion is respected. You get to use the networks you've built over a long career to further causes you really care about, and you're very proud of Tempelhofer Forst and Hasenheide. You do a lot of work for your advocacy, and use your considerable skills to build your case, negotiate, and hammer out details.

Your Task: You want to enshrine it in law that urban nature in Berlin should enjoy similar basic rights as humans. You also want to come away from today's conference with connections that can help ensure the future health and flourishing of Berlin's and Neukölln's green spaces.

Questions: What was one thing you were proud of as Mayor? Which species is closest to your heart out of all of Berlin?



ONBOARDING CALL. Three days before the event, we hosted a video call to welcome all participants in advance, let them see who else is there, introduce what will happen during the event and safety precautions, check in if everyone received their role, and answer any questions. This way, most of the preparation work for a larp happened before the day of the event, and having seen people before also allowed us to jump into the day of the event faster, with a slight feeling of familiarity.

BRIEFING. On the day of the event, we began outside with a brief last introduction to the hosting team and what will happen and safety precautions (e.g. distributing Covid tests) to put people at ease and know what to do if they need support. We briefly introduced the world we would be playing in once we stepped into the church.

PERSONAL INITIATION In groups of three, participants walked through a small heated entrance room, filled with the scent of burnt wood and fog resembling wildfire air. They were welcomed by one of the facilitator-performers whom they had not met outside, and were asked to each think of a challenging situation or period in their life, and what gave them energy during that time. Once they thought of one, they were allowed to pass through the next door into the main room, with a conference check-in where they would receive a name tag with a different name, coffee and snacks.

Once everyone was in the conference room, we intended to stage a power outage with lights and music suddenly going out. This was done in order to bring everyone's attention to an abrupt event that would move them towards a feeling (such as surprise). However, we ended up having a real power outage from a space heater and fog machine.



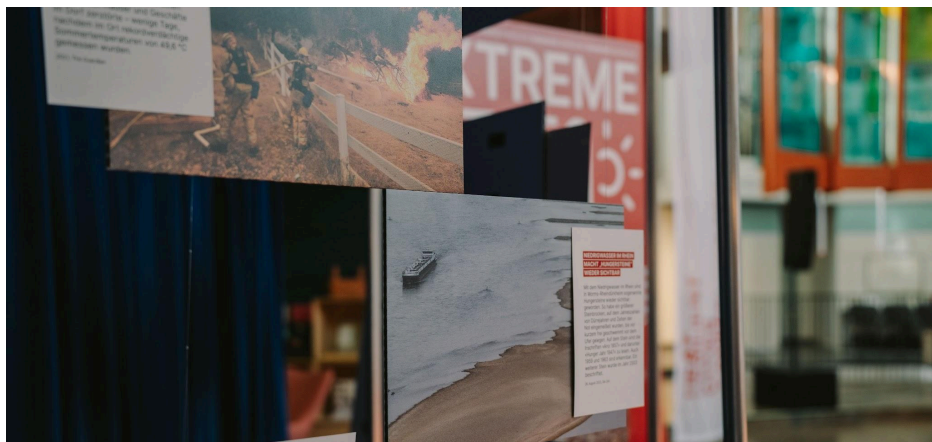
THE WORLD. In the *Heat Resilient Cities Conference*, it has been 10 years since the pan-European heatwave that disrupted public life all across Europe, and together we are revisiting the decade of change that has followed. As delegates, they are here to share their personal memories and experiences, and express their wishes for the next years, to add personal experiences to the Transformation Report 2039. The scenario was intended to balance images that can cause fear and hope, let participants explore a scenario without imposing a judgment (good vs. bad), and yet frame it as a high mitigation, high adaptation scenario. For more, see Scenario narrative: Berlin-Neukölln 2039 Transformation Report.

THE TIMELINE EXHIBITION. We worked with an exhibition of the Berlin-Neukölln 2039 Transformation Report as a future timeline. This on one hand allowed us to introduce people into the key events in our scenario pathway during the experiential scenario, but also they were able to go back to it as they liked, and explore.

ACTIVITIES. We combined typical conference activities such as introductions (in character) and coffee breaks for connection with activities specific to the scenario narrative (Remembering the Heatwave) and site-specific exploration (Site Visits to Locations of Change), as well as activities to engage the senses (Harvest Dance).

Example of an activity: Remembering the Heatwave

Delegates sit in a circle. The facilitator-performer disguised as a heat response volunteer coordinator recounts the pan-European heatwaves of 2029, the situation in Berlin, pointing to the Timeline Exhibition, and hints at past heat waves (real ones before this event) to help participants remember what it could have felt like. Delegates are prompted to fabricate future memories: Where were they during



that particularly hot time, what were they doing (or couldn't), thinking, feeling? The volunteer coordinator invites delegates to share. In this activity, people started sharing made-up memories, and went a step further to connect them to their assigned role: Someone shared about checking in on their elderly neighbors, while another delegate imagined water price wars they would have dealt with in their job as a government official.

THE FINAL ASSESSMENT. The overall in-world “goal” for the event was to gather delegates’ memories and experiences to complete the Berlin-Neukölln 2039 Transformation Report, looking back at the last decade of transformations. The climate scenario exercise ended with delegates working out policy recommendations for the next decade. This started from small groups of three, then connecting with another group and re-negotiating their recommendations in a group of six. Further still, they were connecting with another group, and another, until all participants negotiated a list of recommendations. These were read out by the Patron of the conference, and the event closed with a gong. Participants were then invited to walk through the front door again to leave the imaginary world, take off their name tags, and note down a memory from the experience.

FACILITATORS, ACTORS AND ALUMNI can quickly establish a specific culture or model rules of the world we’re in. When assembling a team for the project, I chose collaborators who were both topic experts, facilitators, and could act out a character, at least as a heightened version of themselves – as those roles would carry the weight of introducing people into the world. We also actively invited alumni as well as actors, who in the past had demonstrated how embodying a role can help everyone get in and stay in the world.



ENGAGING ALL SENSES. We used scent (of burnt wood), temperature (heated entrance room) and sight (foggy air from a smoke machine). Throughout the event, we used music to generate energy as we were nearing the end, and light to change the setting from in-world to out-of-world as the scenario ended.

BREAKS AND CONVERSATION PROMPTS. What do two participants chat about during a coffee break or waiting in line for the bathroom? We don't know. But to help them stay in character, we distributed cards with conversation questions.

DEBRIEF. As the intention was to focus on the emotional experience, and not move into analyzing too soon, we split the debrief in an immediate debrief and an offboarding reflection. To give space to emotions, take care of one another and help process the scenario, right after the experience we gathered all participants in a different room that was previously an out-of-world room and a space for rest. After a brief body scan meditation, we invited everyone to reflect on two questions: What was something you felt today? Was there something you were excited about, and was there something you struggled with?

THE OFFBOARDING REFLECTION. We offered a second debrief focusing on a more analytical reflection in a video call two weeks later. In this debrief, we asked participants to share a memory from the experience, what aspects of the scenario they liked and disliked, and what we could do to achieve or avoid them.

Participant Reflections and Emotions

In the care and reflection session right after the experience, participants shared emotions they felt during the experience, elements that they felt comfortable with, as well as those they struggled with.

Emotions. Participants mentioned feeling inspired, connected, relieved, excited, hopeful, optimistic, doubtful, worried, cynical, self-caring, doubts and being generally thoughtful.

Participants shared **feeling comfortable** being among inspiring people, playing make-believe in a small group. They particularly enjoyed the opening activity (Remembering the Heatwave) for its slowness, responding to one another, and holding space for depth. Participants also shared it was easier to immerse in the catastrophes in the scenario, rather than a radical change.

On the other hand, they shared **struggling** to think beyond the current systems, feeling torn between the challenges and the radical changes suggested, and feeling worried that adaptation alone is not enough. It was difficult to stay in character during the lunch break, and to re-enter the world afterwards.

As participants wanted to talk about the **next steps**, we gathered topics for the video call reflection in two weeks from then: Political conditions necessary for change and the impacts of crises on the political system, considering more overlapping crises and challenges, how to motivate others to act, adapting the envisioned situation to other jobs and roles, urban-rural division, the state of water, and collective care.



Because heat action is a new issue, it has not yet found a place in institutions

Weil Hitzeschutz ein neues Thema ist, hat es in den Institutionen noch keinen Platz gefunden

Bureaucratic decisions cannot (don't want to?) be made without clear authority and responsibilities

Bürokratische Entscheidungen können (wollen?) ohne klare Befugnisse und Rollen nicht getroffen werden

1. We gathered an initial network of people who have the potential to make Berlin more heat resilient

We learned from desk research and expert interviews that there is no current “team” in Berlin working explicitly on heat resilience. However, there are people working on heat health, (social) welfare, urban green and city planning, in their own silos. These people are self-driven and highly motivated and working beyond their capacities of their “regular” jobs. They are more than aware that a lot more capacity is needed. At the time of research, heat resilience has not yet been addressed by institutions, and no institution wants to be the first to take responsibility. For context, climate measures can be decided on federal level (Germany) or municipal level (e.g. Berlin-Neukölln).

- We gathered people working on heat health (e.g. German Alliance for Climate and Healthcare, *KLUG*), social welfare (Red Cross, Hitzebus/Heat Bus), urban green & planning (municipality, urban planners, district planning), policy and administration (municipality, state of Berlin, Green Party), and people working manual & creative jobs (a facility manager, community manager, musician, historical tour guide) - all from Berlin.

In extreme heat, we work
under extreme conditions, but
our makeshift solutions are
just not good

Bei Hitze arbeiten wir unter Extrembedingungen, aber unsere
Makeshift-Lösungen sind suboptimal

Time is a resource you can
'cheat' with before financial
support is there – with
physical resources you can't

Mit Zeit als Ressource kann mensch mogeln, bevor finanzielle
Unterstützung da ist – mit physischen Ressourcen nicht

2. We identified some current challenges and opportunities for local change towards “deep resilience”

Our research interviews have uncovered that there are not enough people and no funding for the structural and institutional changes necessary. Time can seemingly be “squeezed” out and so new heat-related responsibilities have been distributed among existing people, but they cannot give it the attention it deserves. Physical resources always need to come from somewhere. Interviewees said that with the sparse resources they have, they need to be sure that we are spending them wisely, and that in the search for funding and resources, they “are fighting against bureaucracy.”

With extreme heat, people are working under extreme conditions. The makeshift solutions they are working with aren’t standing to hold the extra stress. Interviewees suggested that they need awareness and attention to the effects of extreme heat, and appreciation for those bending (bureaucracy) over backwards. Especially in policy, they need to negotiate many conflicts – to create something that serves all, we need to take things away from some people. Also, the groups seemed to have been working independently – as if their challenges had been separate.

- We aimed to explore and negotiate a shared vision of a future where Berlin is dealing with more frequent and intense heat waves, and has radically adapted to extreme heat – and see the responses we can spark from people working on it from different angles.

Previous networks have come together only through enormous self-motivation and effort on the part of those involved

Bisherige Netzwerke sind nur durch enorme Eigenmotivation und Aufwand der Beteiligten zusammengekommen

Politicians need strong public backing to bring up an entirely new challenge

PolitikerInnen brauchen ein starkes öffentliches Backing, um eine absolut neue Herausforderung zu vertreten.

3. We exposed people who work on cities to the effects of extreme heat in a role-play scenario exercise and reflected with them upon their experiences

Part of the motivation for the research was to find a specific need for the climate scenario exercise. The interviews did not help us find one shared, specific goal or need, as people working in heat resilience may have very different goals. However, the interviews helped us build in real challenges and roles into the scenario, making it more realistic, and to prepare our own characters and their backstories. This was especially relevant for the two new collaborators on this project.

Running the experiential climate scenario, we found that roles were extremely powerful. Given roles, people drew lots of inspiration from their backstories, and drove the scenario beyond the prompts we gave them. People found their ways to negotiate conflict while staying in the world and sharing dissatisfaction with some happenings from our speculated history, such as turning Tempelhof into a forest. Attention to details paid off: The space heater and burnt wood in the initiation engaged the senses. Participants shared that they enjoyed getting to play in the narrative world in small groups, diving into the details, uniting feelings of joy and fun, concern and cynicism, and self-care. Some shared that they struggled to think beyond existing systems and rules of the world. Some felt torn between the “negative” and “positive” aspects of the narrative, some found it easy to put themselves in a catastrophe scenario, but not in a radically changed world.

- Don't play it safe: As a team, we felt that we had taken a big risk asking 'serious' people to play a character, but it paid off.

Intended next steps: Looking to spark new projects that work towards deep resilience

After hosting the experiential intervention Heat Resilient Cities Conference 2039, the team have been asked if we could run the participatory process for the airfield-turned-park Tempelhofer Feld “Tempelhof Bleibt!” to prevent a law decided in a public referendum to be overturned. Also, the team have been asked whether this participatory performance could be run at a series of German theaters.

As we were initially looking for a goal, we asked ourselves:

- How could we start building the heat response network Hitze-Hilfswerk?¹⁷ For real, or as a fictitious organization to inspire orgs like the Red Cross?
- How could we use the scenario exercise as an intervention in other grassroots policy process, such as the ongoing referendum Berlin 2030¹⁸?
- How could we start building heat response services¹⁹, such as a people-, nature- and infrastructure-centered heat warning system?
- What if we focus on the format as participatory performance²⁰ and bring it to German theaters?

After some reflection, these intentions changed, but they inspired the following projects HeatCon 2023 and Urban Heat Studio.

¹⁷ Collaborator Julius and I were thinking about the heat response network Hitze-Hilfswerk. In parallel, we were designing the pop-up space intervention Cooling Center with the German Red Cross.

¹⁸ Also see footnote 16 on the referendum Berlin2030. www.berlin2030.org

¹⁹ We did not follow up on designing heat response services, but this was a key question as Francesca and I started exploring the vision for Urban Heat Studio.

²⁰ We did not follow up with this request, but it heavily inspired the next year HeatCon 2023 and the direction for Urban Heat Studio.

What people said

"[I remember] sitting in a circle for the first time. We slipped into our roles. We had gotten our tags outside. And then everyone joined in and was really into it."

"[Ich weiß noch,] zum ersten im Sitzkreis. In unsere Rollen geschlüpft. Draußen unsere Schildchen bekommen. Und dann haben alle mitgemacht und sind mega drin gewesen"

"Everyone started sharing their personal experiences: 'My grandma was in the hospital.' ... When people were super quick to respond with personal stories, it made my throat choke up. 'I hope your grandma is better' [Although] you knew it was all fake."

"Alle haben aus ihren persönlichen Experiences erzählt: 'Meine Oma war im Krankenhaus.' ... Als Leute super schnell mit persönlichen Schicksalen reagiert haben, hat mir das die Kehle zugeschnürt. 'Ich hoffe, deiner Oma geht es besser.' [Obwohl] man wusste, es ist alles fake."

"It has a surprisingly personal element to it, even when you're dealing with it professionally. Even though I feel tired when it's hot and all that, I'm not caring for small children and elderly people. [It] helped me to experience it in a different way, to envision it, which I don't have at my desk. That you feel affected."

Es hat eine überraschend persönliche Komponente, auch wenn man sich beruflich damit beschäftigt. Auch wenn ich bei Hitze mich schlapp fühle und so, ich bin nicht dabei, Kleinkinder und ältere Menschen zu pflegen, [es] hat mir geholfen, es auf andere Weise zu erfahren, vergegenwärtigen, die ich am Schreibtisch nicht habe. Dass man sich betroffen fühlt.

"The aim is not to go out as an organization and have a heat action plan, but to raise awareness and empowerment. [The scenario] creates concern that would otherwise be lacking."

"Ziel ist nicht, man geht als Organisation raus und hat einen Hitze-Maßnahmenplan, sondern Sensibilisierung und Empowerment. [Das Szenario] schafft Betroffenheit, die sonst fehlt."

Reflection

Roles and Character Design. Roles proved surprisingly effective for local heat resilience stakeholders, showing our initial hesitancy was unfounded. It could be interesting to continue developing characters to reflect more connections and power dynamics, especially around institutional power structures in climate adaptation work, mixed with personal motivations.

Sensory Experiences. Sensory elements such as the scent of burnt wood, heated room and fog contributed to the immersion, however their implementation was challenging and somewhat superficial. In future iterations, I would like to additionally explore sensory and emotional experiences or second-level climate impacts.

Debrief Methodology. The split debrief approach – immediate emotional processing followed by analytical reflection two weeks later – allowed for immediate emotional responses and considered analysis. However, the gap between sessions led to some loss of momentum and engagement. The body scan meditation in the immediate debrief helped participants transition out of their roles, though some struggled to maintain connection to their emotions during the analytical session.

Power Dynamics in Role-Play. Participants navigated complex dynamics within their roles, particularly negotiating conflicts around urban transformation projects such as the rewilding of Tempelhofer Feld. Including roles from various societal levels created authentic tension points. However, some participants struggled to challenge existing power structures even within the fictional setting, such as the power structures in capitalism, suggesting how deeply ingrained that worldview is.

Cross-Sector Collaboration. The project gathered diverse stakeholders who typically work in silos, creating new connections between researchers and those working with municipalities. Nevertheless, the one-off nature of the event limited opportunities for building a community sustainably. Some participants noted that they

gained new perspectives, but even to us as creators, translating these connections into real-world projects remained a challenge.

Institutional and Grassroots Efforts. While the event gathered relevant stakeholders and generated enthusiasm, it revealed significant gaps in institutional capacity for heat resilience. The emergence of follow-up requests from a theater and a civil society group suggests potential for experiential engagement with climate resilience. This suggests potential for integration into more formal policy development processes.

Recruiting participants. Recruiting decision makers proved challenging and resource-intensive, especially as the intended audience changes with the intention for the intervention. We could either focus on building a more lasting network, or work with cultural institutions and existing networks to help us reach the right participants.

Emotional Safety. While emotional processing is important, the team wondered how far participants might allow themselves to tap into their emotions in a new group, or if participants tend to suppress feelings. In future projects, we could integrate emotional elements more naturally and provide safer ways to engage with difficult feelings while maintaining focus on the work.

Intention over goal. While the team spent time defining the goal and a clear direction matters, rigid goal-setting can limit discovery. Our most valuable insights often emerged from seemingly inefficient discussions and an exploratory process. Future projects could focus on setting clear intentions while remaining open to unexpected discoveries, allowing time for exploration and being comfortable with uncertainty.

A Library of Alternatives? We cannot become what we can't imagine. A too narrow example of a future trajectory is not enough, especially for skeptical audiences. People need multiple tangible examples to find ones they can relate to and build upon. We could re-future diverse, specific scenarios that people can see themselves in, showing many different alternatives and examples.



HeatCon 2023

Immersive gathering and performance for climate practitioners and creatives to infuse present-day climate adaptation conversations with long-term transformations

July–November 2023

Creative Impact Research Centre Europe

Project Team: Juli Sikorska, Francesca Desmarais, Jelka Wickham, Franziska Lindner, Ștefan Peca, Janna Jung-Irrgang, Rishikesh Tirumala, Stuart Candy (advisor)

Context

Working with my collaborators at the Urban Heat Studio, I envisioned an annual gathering for climate practitioners and creatives to embody wildly different futures. This meant a switch from an on-demand approach to a more intentional annual gathering. On one side, it was to preserve collective energy as producing experiential scenarios has proven exhausting. On the other hand, I saw this as an opportunity to gather with intention, invite new people into our circles, and feel the magic of a temporary “utopia” – not in the sense of a utopian scenario, but in the sense of a special, temporary event.

I pitched HeatCon as a design research project to the Creative Impact Research Centre Europe (CIRCE) and their Research Lab Berlin. They are “dealing with parameters for transformation in governance structures in close cooperation with the creative economies” (Creative Impact Research Centre Europe, n.d.). They are researching how “public structures [can] better and more inclusively support people from the creative/innovative ecosystem who generate a positive impact on society, the environment, and the economy” (Creative Impact Research Centre Europe, n.d.). Our project partners – a project manager at CIRCE and a sociology professor – were particularly interested in insights related to transformative governance, anti-discrimination, and cultural and creative industries^{21 22}.

²¹ The design research report is also available online via CIRCE: https://creativeimpact.eu/wp-content/uploads/urban-heat-studio_final-report_public-version.pdf, see (Urban Heat Studio et al. (2023)

²² The CIRCE Research Lab Berlin have published their learnings from the bigger research that this study was part of in Creative Impact Research Centre Europe, (2023)

Intention

With this experiential gathering, my collaborator Francesca and I wanted to bring something to life that would be a little more in the theater space than before. In a conversation before the project started, we discussed our intentions and questions for this third iteration of HeatCon. We were now thinking of it as an annual gathering for climate practitioners and creatives to embody wildly resilient futures.

We saw climate fiction as the main alternative to the immersive experience we wanted to create. However, instead of *reading* fiction, we wanted to let people *experience* fiction. As theater has a long history of being used as collective therapy (Boal, 2013) this felt like a natural fit to do so. Finally, a new project team was a new opportunity to build a new culture that we would be passing on to the participants we hoped to involve in this intervention.

Scenario. In the past, our scenario has always been a little incomplete. We still want to create moments where people can bring in their own perspectives. But this time we were curious: How do we push more radical thinking? Our other explorations had brought speculations to life like traveling heat responders and cooling centers that suggested an entirely different reality. But they were both tied to extreme heat—what if we shifted the theme completely? Can we incorporate learning into the experience, so that people develop ownership? In her design work at a healthcare company, Francesca’s main uncertainty (and her own theory of change) is about coming back from the future scenario and engaging – not about just getting to that future, but about shifting perspective(s) together. We chose to base our work in the Oxford Scenario Planning Approach (Ramírez & Wilkinson, 2016), where every scenario is a learning experience to engage in.

Experience. Can we further facilitate feeling rather than thinking, and create a communal experience? To let people step into the world and the rules it works by, this time I wanted to lean more into immersive performance. By performing parts of the story, we could introduce the

rules of the world more efficiently, shorten the immersive experience to two hours, keeping the focus sharp, and having facilitator-performers enact certain scenes and emotions could allow participants to still experience the world, even if they don't want to role-play themselves.

Team. With this experience, we again expanded our team with new collaborators. This was an opportunity to onboard them and integrate them into the process. While the new scenario provided a more even playing field. As long-time collaborators, Francesca and I had already developed our working culture and established a communication style and shared implicit knowledge; this was an opportunity to not only share our existing culture with new collaborators but to build a (temporary) culture together.

Questions

This research continued an evolving strain of experimentation on experiential futures for anticipatory governance with a climate inflection, exploring how European cities (such as Berlin) might radically adapt to the climate crisis (see [Berlin-Neukölln 2039](#), [Urban Heat Island Living: Berlin-Neukölln](#), [Climate Futuring Weekend](#), [Heat Resilient Cities Conference 2039](#)). In this iteration, we were interested in how experiential futures, and related fictional and narrative approaches, might help us become more resilient, sooner. More specifically, **how can experiential climate scenarios help climate practitioners a) surface emotions about futures, and b) openly explore perspectives about barriers and opportunities that underlie assumptions about these futures?**

Based on the learnings from our past work, including five previous editions of an experiential climate scenario (four [iterations of the Heat Resilient Cities Conference](#) and [Heat Resilient Cities Conference 2039](#)), we went into this project further asking:

- Our past scenario was too short sighted, focusing too much on an immediate emergency response and changes to the urban built environment – what could transforming structures to reduce inequalities look like?
- Where are policy makers at – what matters to them, and what role do they see for fiction, narrative, visions and experiences?
- Can we engage participants more closely and even more emotionally than before?

These questions shaped the subsequent research process and the three research phases.

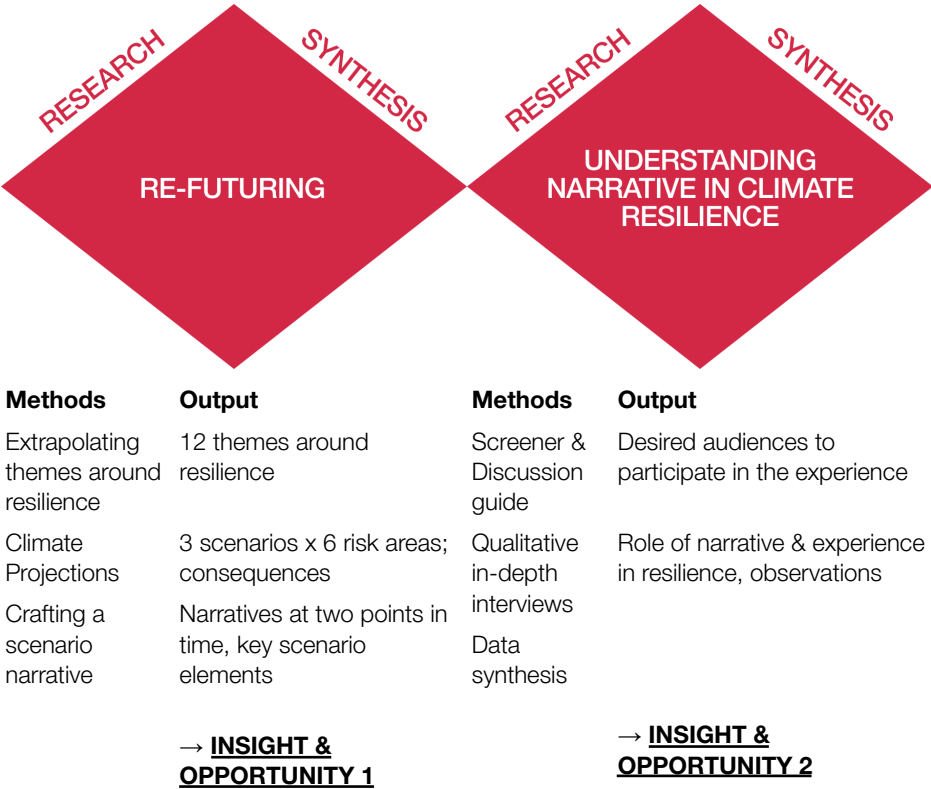
Research Process and Methodology

Together with the team, I followed a practice-based action research approach. Our creative practice was designing an experiential scenario: an immersive experience of a future scenario, intended for climate practitioners, disguised as a half-real, half-fictional conference on climate resilience. It is set in an ambiguous future brought to life through immersive theater (Warren, 2017), live action role play (Stenros & Montola, 2010), and co-creation. In order to create the experiential scenario (Candy, 2010), we followed a four part methodological approach consisting of research *for* and *through* design (Sanders, 2008). The phases informed each other, each had its own synthesis and reflection phase, and they were brought together in a final reflection in order to create the final design case study.

Process, Method and Output Overview

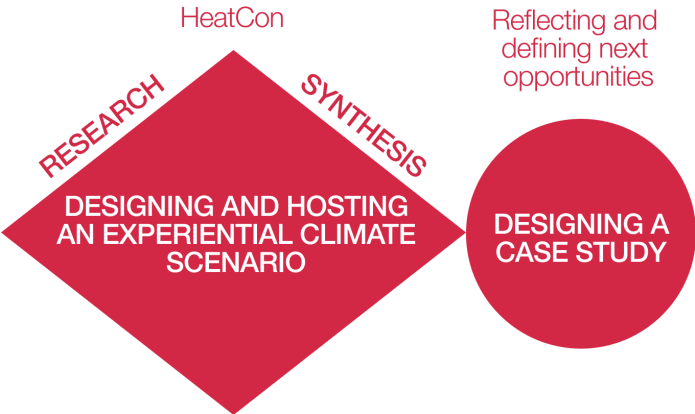
Research for design

In order to inform and inspire the design, we explored future scenarios of climate resilience that would provide content and serve as the basis for the experiential future (Phase 1: Re-Futuring). We also explored the current role of narrative, fiction, and experiences in climate resilience to inform the format of the experience (Phase 2: Understanding narrative in climate resilience).



Research through design

Building on the findings from the previous phases, we translated the narrative into experiential scenarios in the form of an immersive play, paired with sensemaking activities. We organized a two day event in the form of a half-real, half-fictional conference on climate resilience for people in policy and creatives (Phase 3: Designing & hosting an experiential climate future). We finally synthesized our learnings into a zine about the potentials of experiential climate scenarios (Phase 4: Design Case Study).



Methods

Intention setting

Team setup

Venue scouting

Gathering people

Anti-discrimination
& safety principles

Immersive structure

Sensemaking

Community- building
activities

Output

Engaging policy-makers in conversations
around long-term, structural transformations

Learned & lived experience

Community space and church in Berlin

Policy makers, activists, civil society leaders

Principles for Anti-Discrimination & Diversity, 4 key
measures before / during / after the event

Immersive theater play in two acts

Debrief, Deconstructing Metaphors

Opening & closing activities, shared meals

→ **INSIGHTS & OPPORTUNITIES 3 & 4**

Pre-project explorations

Before this project started, I explored how to translate scenario narrative snippets into experiential situations. I either improvised myself or devised a scene with immersive performers, and tested it with an audience of other immersive performers. These explorations resulted in elements such as experiential situations, images, and premises.



Example of an experiential situation:

Heat Responder Aptitude Test

Imagine you signed up to be a heat responder. You undergo a physical, cognitive and emotional training under extreme conditions with limited senses (45°C/113°F sauna, eye mask) where you have to answer personal questions and respond to hypothetical situations. For instance, you might be asked how you would respond if you see a possibly unhoused person laying on the ground in 45°C heat in the sun at 11am. Based on your responses, you are assigned to the traveling heat responder crew, the local cooling center hosts crew, or a resilience backline worker. This situation includes the scent of burnt wood and an AI-generated voice recording of a four and a half minutes test with questions. This situation was later adapted to what became the “Rehousing Office Aptitude Test” in the experiential situation Resilience Worker’s Fair.



Example of an Image: The Body

Strong visual of a body wrapped in an emergency blanket being carried away.

Example of a Premise

Under what pretense do the audience step into the fictional world to help them ease the transition in time and mindsets? I explored settings such as:

- simulating a heat emergency in a **cooling center** that would focus on the emergency response.
- an **annual gathering** of resilience workers that would focus on re-skilling.
- a **conference** format that allows “site visits” to various points in time and fictional situations, while maintaining a veil of a formal conference.

HeatCon 2023 ended up combining the conference as the broad premise for the experiential gathering, with an gathering of resilience workers as a premise for one of the experiential situations.

Phase 1: Re-Futuring

We used a design futures approach to explore new uncertainties and factors related to resilience scenarios, and extrapolate them into future scenarios. To inform and inspire the scenario process, we scanned signals of change, trends, and scientific literature related to physics, climate action, and landscape conditions (broader context). We identified 12 main factors related to futures of (climate) resilience. We extrapolated each of the factors in the four “Alternative Futures” (Dator, 2009) – continue, collapse, transform, and discipline – and then grouped the four alternative futures, which provided us four scenarios. As neither the continued nor collapsed futures are relevant to our goal of transforming the systems around climate resilience, we focused on the transformed and disciplined futures. As our goal was to produce a scenario narrative for an immersion, we meshed these two scenarios into a timeline. This meant that we ended up with one explorative (not normative) and situational (looking at a point in time) scenario with two “timestamps” of a near- and far-future, which serve as the basis for the narrative development (see appendix for a framework distinguishing scenarios / situations). For more detail, see the process for Resilience beyond the current view.

Phase 2: Understanding Narrative in Climate Resilience

We conducted in-depth interviews lasting 30-60 minutes with three recruited participants from the fields of (climate adaptation) policy and civil society and community organizing. Each interview followed a semi-structured guide, inviting participants to discuss the role of fiction in policy making, their past experience using fiction, as well as hopes and aspirations. The Europe-based participants (Italy, France and Germany) were recruited based on their history having utilized fiction in a policy or civil society context. We complemented this with desk research on climate fiction and the act of writing it, as well as research into existing tools in the policy space, such as the Triple A Toolkit (“Triple-A Toolkit,” n.d.), and Visual toolbox for system innovation (de Vicente & Matti, 2016).

Building on the findings from the previous phases, we moved into research through design, creating an experiential climate scenario and hosting an event to engage with people working in the climate resilience space across policy and administration, civil society, and the arts and cultural spaces.

Phase 3: Designing and Hosting an Experiential Climate Scenario

We translated the future scenario and findings about how policy makers and civil society organizers use fictional approaches to create an immersive future using elements from immersive theater, live-action role-play, and co-creation, and hosted a two-day event for thirty people in climate resilience, policy and creatives. The key elements we focused on in the design process were intention, people, diversity and inclusion, site/location, immersive scenario and situations, facilitating sense making, and community. For the translation of the future scenario into actionable situations, we followed the “Experiential Futures Ladder” (Candy & Dunagan, 2016). We worked with a playwright to craft play scenes out of the situations, as well as a narrative to connect the scenes into a story, facilitate the entry to and departure from the fictional scenario, and work on site specific, participatory and immersive elements of the experience. In the very first and final stages, we crafted the scenes on-site in a collectively co-created (devised) process. We also ran a playtest to test audience participation and gather feedback. As the improvisation required a good understanding of the resilient world and topical knowledge, the actors-improvisers-facilitators all were all topic experts in the resilience space and seasoned facilitators, with varied experience in improvisation and acting. To help participants make sense of the experience, we designed a session to debrief immediately after the experience. Additionally we offered a deeper session for the day after to deconstruct metaphors, explore values underneath them, and make the boundaries of participants’ imagination explicit. Reflecting on and analyzing the metaphors used in an experiential future provides a useful vantage point from which to critically reflect the underlying assumptions, boundaries and mechanisms of the future laid out in the experiential

future. This is relevant because boundaries to imagination exist even in a space where a group of people are asked to imagine without limits (Fischer & Marquardt, 2022).

As methodology merges with output in an iterative approach, where process is redefined through the insights as we go along, we discuss the remaining elements in the Outcomes and Insights section.

Phase 4: Design Strategy: Designing a Case Study

We synthesized the learnings from designing and hosting an experiential climate scenario, building on the previous phases, and defined a design strategy to move forward. For this we created a zine – a small-circulation self-published “magazine”, easily reproduced via a printer or copy machine – to support decision makers. It is about the potentials of experiential climate futures, based on the case study of HeatCon 2023. Initially, it was intended as a toolkit to share with policy makers, but we learned that there is a bigger need to communicate *why* rather than *how* to create experiential climate scenarios.

Outcomes and Insights

- Created scenario narrative
- Uncovered attitudes in Policy: Insights
- Defined key parameters of HeatCon
- Uncovered Emotions that participants experienced through the immersion
- Additional reflections



Scenario Narrative

A scenario narrative of a highly decarbonizing world in the midst of a transition towards post-growth with two “timestamps” at different points in time. The timestamps show a possible evolution of one scenario over time, and how the policies initiated in the near term scenario transform society in the long term.

Time stamp 1: Resilience Workers in the Near Term (ca. 2030) Set in a near-term future where multiple climate impacts are colliding, and immediate health and emergency response is most urgent. New local and global policies are created. Long-term impacts set in motion a series of dominoes that unleash more structural change.

Consequences of climate projections: Relocating, rehousing, food (in)security, community health preparedness, health effects, informal community networks, focus on strengthening local economies.

Key Scenario Elements: Compounding Climate Impacts: Heat, Fire and Flash Flood; Heat and Terror Attack; Rehousing; Universal Basic Services & Income

Time Stamp 2: Resilience Beyond The Current View (ca. 2070) Set in a far-term future where we have almost reached global carbon neutrality and are in the midst of a transition to post-growth. Emissions – now considered a security threat – are at a record low, but decarbonization has come at a high cost. Social justice is strong and the globe is more and more adapted to the higher temperatures. In changing economic conditions, people are rediscovering what is worth living for.

Consequences of climate projections: Relocating and rehousing at higher intensity, self-sufficient food networks and energy supply, community-led healthcare and emergency preparedness, designated safe and unsafe areas to live.

Key Scenario Elements: Resilience is: Community-Led Healthcare, Retraining for Post-Growth Activities, Decarbonization Marathon, Climate Safe Havens

For the full scenario, see [Resilience beyond the current view](#).

→ **INSIGHT**

Community-led response, transitioning economic systems, large scale rehousing projects, and accelerating decarbonization are critical to transformative adaptation, but not considered sufficiently in current climate adaptation plans.

→ **OPPORTUNITY**

Bring in long-term, structural transformation into current climate adaptation debates.





Attitudes in Policy: Insights

Insights from interviews with policy makers on the role of fiction, narrative and experience in climate resilience and policy.

Interviewees were people in policy and civil society organizing in European cities dealing with climate adaptation and transitions who have worked with relevant approaches.

We identified three main attitudes regarding the role narratives play in climate policy:

#1: Communicate scientific facts to build emergency preparedness

“Climate stories are a way to communicate and to engage citizens – we talk about the most vulnerable groups of society.”

–external project manager for a European city

#2: Tell better stories to transform systems

“We use [the doughnut economics model] not as a future vision, because it’s partially already here, but rather as a narrative to engage people on a different level.”

–independent leader of a chapter of the Doughnut Economics model in a European city

#3: Explore scenarios to build anticipation

“Design fiction is good for asking big political questions and raising questions about political topics that the elected representatives need to answer.”

–design fiction manager in a European city

Additional Observations

Localized stories, reduced to scientific facts: Two interviewees worked with stories tailored to their cities to communicate risks to citizens; one of them was reduced to local geography such as a thermal map, freshwater and walking distance to green spaces.

Just a step in the process: One participant saw making the future climate story as a step in a process, after defining communication goals and before organizing a citizen engagement activity.

The people crafting those stories are not the people commissioning them: One person would decide what stories to tell or topics to explore and commission another to do so.

→ INSIGHT

Speculative and experiential approaches could have huge political potential, but people in climate resilience policy aren't utilizing it.

→ OPPORTUNITY

Shift the role of narratives from merely communicating scientific facts to speculating, exploring alternatives and building anticipation.

REHOUSING RESILIENCE WORKER

Aptitude Test

YES

☐ I can anticipate frictions between people and resolve conflict before it erupts

☒ I understand the internal diplomacy of working with political opposition and law enforcement

☐ I understand the importance of the relationship of the community to the state



Key parameters of HeatCon

Various parameters and their manifestations have been tried in the previous iterations, and in this HeatCon finally synthesized these eight key parameters for creating experiential climate futures. This is done to firstly surface emotions about futures and secondly openly explore perspectives about barriers and opportunities that underlie assumptions about these futures.

INTENTION. Bring long-term transitions into current conversations on climate adaptation and policy.

VENUE. A former church in Berlin-Neukölln that is used as a space for community, spirituality, and events.

TEAM. Interdisciplinary expertise of strategic and experience design, foresight, climate adaptation, policy, with diverse lived experiences.

PARTICIPANTS. They came from policy and administration on federal and local level, intermediary between business and policy on federal level, activism, NGOs, non-profit/social cooperatives, (social) business, cultural sector, and academia. They included e.g. a municipal design fiction project manager, urban heat consultant, climate adaptation advisors and researchers, elected leaders of associations (NGOs), designers, artists, writer, curator, and a death worker.

IMMERSIVE STRUCTURE. A two-day half-real, half-fictional conference on climate adaptation and resilience. Participants explored an immersive scenario in the form of an immersive theater play. Guided by a narrator, they visited two experiential situations exploring resilience beyond technical measures, as well as a community-based decision making process on long-term transformative adaptation.

ANTI-DISCRIMINATION, TRANSPARENCY AND SAFETY. Diverse representations of those related to and affected by (climate) resilience in European cities, including historically underrepresented and overpowered

communities in Europe. This includes various levels of "power" (in governance and civil society), north/west & east/south Europe, economically richer and poorer municipalities, race and ethnicity, structural and individual backgrounds. This was covered via signup questions about safety, anonymous signup review, financial support for participants (incl. for care work), safety person and spaces during the event, invitation to share reflections and feedback after the experience.

SENSE MAKING. Debrief immediately after the immersive experience, deconstructing metaphors utilized in the scenario to uncover values behind them.

COMMUNITY. Community building activities, four meals to facilitate informal connections, and opened up the space to questions and suggestions from the participants.

→ **INSIGHT**

Intention determines key parameters for the experiential future, including the team, participants, anti-discrimination, transparency and safety, venue, immersive structure, sense making, and community.

→ **OPPORTUNITY**

Define the intention early and use it to guide challenging design decisions.





Emotions that participants experienced through the immersion

Participants expressed feelings ranging from joy and curiosity to sadness, guilt, fear and frustration.

“I felt relief that this wasn’t a doom scenario.”

“I felt comfort and curiosity in the space.”

–HeatCon Participants

Reflections on barriers and opportunities

Participants suggested to create community (safe) spaces, a sense of urgency and to spur action by paying resilience work and making care and volunteer work even more visible; support bipartisanship and abolish perfectionism in politics; address inequalities in housing distributions issues; establish practices of care; and create spaces (such as HeatCon) that show an alternate way, allow to feel and experience resilient futures.

“There was a situation that we should turn our mindset away from scarcity towards abundance and that for me was something completely new and inspiring. I always think of scarcity and of lack of things. Just to have this change of mindset I find very helpful to be able to imagine possible future scenarios which as the topic as it may sound, may not be that dystopian.”

–HeatCon Participant

Values participants saw behind the metaphors in the immersion

Decarbonization Marathon: long-term thinking, hardship, conserving resources, commitment, and duty.

Safe Havens: sense of trust in the community; common decision-making and co-creation.

Balancing Abundance: Belonging, sharing, letting go, love, trust, identity, openness.

→ INSIGHT

HeatCon brought together 30 people adjacent to policy to inspire their imaginative capacity to explore pathways to transformative adaptation uninhibited by present-day factual boundaries

→ OPPORTUNITY

Stage experiential interventions from the niches of political spaces and continue building awareness and trust for experiential climate futures among policy makers.

Design Strategy: Showcasing potentials of experiential climate scenarios for anticipatory governance: HeatCon 2023 Case Study

→ **Acting on an opportunity**

Stage experiential interventions from the niches of political spaces and continue building awareness and trust for experiential climate futures among policy makers.

To build awareness and trust among policy makers for experiential climate scenarios, the team designed a case study to communicate the benefits of the approach.

- **Why:** Need for more experiential climate futures in climate policy for more transformative pathways.
- **What** an experiential climate future can look like, using the example of HeatCon.
- **What it does:** Highlighting five key benefits of experiential climate futures .

Presented in the form of a zine that can easily be placed on policy maker's desks.

→ **Get the zine:** <https://bit.ly/heatcon2023-zine>

What people said

“As long as we are viewing everything from our point of view and our experiences right now, we don’t realize the biases in our head, and it shapes how we perceive the future and the solutions we might think of. We might need a totally different approach.” –co-founder at NGO

“The highlight was that you could dive into the future and really feel it as if it was 30 years into the future.” –project manager on the intersection of policy and business

“There was a situation that we should turn our mindset away from scarcity towards abundance, and that was something completely new and inspiring to me. I always think of scarcity and of lack of things. To have this change of mindset, I found it very helpful to imagine possible future scenarios, which may not be that dystopian.” –artist

“[HeatCon] might help decision makers take a step out of the everyday business they are dealing with and project a step further, over the crises we have now that are very pressing. Maybe look a bit more at the future and what long-term decisions might be useful to achieve these good moments, and let them also experience them.” –project manager on the intersection of policy and business

“HeatCon awakened my curiosity to work with future scenarios. I’m a very big fan of science fiction, so I always imagine potential ways of living and what could be future issues and solutions. It is sometimes a bit tough to imagine all these issues, and it’s good if we think about them before to be prepared, and imagine how we might react to it.” –urbanist

Reflection

Through reflection with participants and in the team, the team have synthesized five potential potentials and benefits of experiential futures for anticipatory governance with a climate inflection, as well as the conditions for the project within the team and project partnership.

Potentials and benefits of experiential climate futures

- Inspiring and practicing radical, collective imagination.
- Exploring how it could feel to live in radically climate-changed scenarios.
- Investigating pathways to long-term, systemic transformations within climate adaptation.
- Surfacing assumptions about a future and the values behind them.
- Opening mindsets to new perspectives and connect it back to daily lives and work.

What does it take to make experiential climate futures approaches impactful?

Start early: choose a point in a (political) decision-making process that's allowing for open-ended discussions. Consider the approach as shaping the framework rather than the outcomes.

Invite different perspectives: ensure that the group of participants represents different points of view on the status quo, balancing across levels of power and theories of change.

Engage with the unknown: not knowing, and not being able to predict the future can be uncomfortable. Create a safe space for experimenting with what might feel difficult and challenging assumptions about the "normal."

Open up about values: design fiction is a highly political tool, and inevitably everyone brings assumptions and subjective thinking to the

table. Reflect on your own desires and be transparent about your set of values.

Our project partner, CIRCE Research Lab Berlin, was particularly interested in the role of anti-discrimination, cultural and creative industries and transformative governance. Specifically in context of the exploration of how public structures can better, and more inclusively, support people from the creative and innovative ecosystem. These are considered people who generate a positive impact on society, the environment and the economy. In this section, I highlight our core reflections on these topics.

Anti-Discrimination

This experiential climate future sought to create diversity based on five principles: 1) different levels of political influence (European vs. national vs local vs grassroots), 2) Northern/Western vs Eastern/ Southern Europe, 3) economically richer and poorer municipalities, 4) race and ethnicity, 5) structural and personal backgrounds. Defining who is invited implies who is not invited, but also who is left out. While principles 1-3 relate to political structures and can be sought out, principles 4-5 relate to the individuals themselves, and so an intention to gather people in policy and adjacent spaces comes with an implication on the diversity of people in the room. This determines the values and assumptions that people bring and what they collectively imagine in an experiential future. A highly politically diverse group with less personal diversity (representing formal governance practice) will create a different experience from a group with rich personal individual and structural backgrounds (as possible in the informal spheres of political influence). There is value to the full spectrum – depending on the intention of the experience.

Cultural and Creative Industries

Design research, as research through making, is a core competency of the cultural and creative economies that recognizes exploration, experimentation and play as part of a rigorous creative approach. Design

research is able to rapidly alternate between creative and analytical thinking. As a way of knowing, it can stand alone or complement scientific research approaches. Designing experiences and surfacing emotions in particular is a key component of creative practices, and creatives bring a specific mindset of learning through experience and reflecting on those subjective experiences.

This makes creative approaches relevant beyond the creative spheres – here, finding its application in transformative governance and climate adaptation, but also in broader eco-social transformation contexts (Ampatzidou et al., 2021). Permeable relationships between cultural and creative industries and (climate) policy spaces could advance the development of transformative adaptation and governance through experiential learning and emotional connections.

Transformative Governance

Experiential climate futures allow us to process complex eco-social issues and systemic transitions through a personal (emotional) experience. On top of analytical processing, this adds a necessary layer of understanding that deals with how people might respond in a given situation they had not yet experienced. It renders concrete the otherwise “fuzzy” values, goals of systems, mindsets and paradigms – the highest levers of systemic change (Meadows, 1999), and this in turn allows transformative conversations for transformative governance. From a systems transitions perspective, this is valuable in both established, official political spheres (the “regime” (Geels & Schot, 2007)) as well as informal, grassroots spaces (the “niches”).

Further, the public sector can better support and involve creatives by embracing transformative practices to climate mitigation and adaptation. They can do this by encouraging transfer of creative insights and methods to climate policy, using experiential scenarios in political decision-making and administration, making funds available for experiential futures practices, and creating experiential futures staff positions in the administration.

Interim Conclusion

One of our aims was to advance transformative climate adaptation through an experiential climate scenario with European policymakers, with an emphasis on long-term systems transitions. We embedded experiential futures in transformative adaptation and followed a rigorous research approach based in practice and imagination.

We created a scenario narrative, uncovered different roles of narrative and experiential approaches in (climate) policy today. We also designed an experiential climate future and hosted an event for 30 people in and adjacent to climate policy to inspire their imaginative capacity to explore pathways to transformative adaptation. The experiential climate future surfaced emotions ranging from fear and frustration to curiosity and joy, as well as values and mindsets that underlie assumptions about the future.

Through interviews, observations from an experiential climate scenario and reflections with participants and the research team, we have found that despite the huge potential experiential climate futures as a political tool in futures-oriented climate policy. In particular, they are yet to reach policy makers and earn their trust to help explore transformative pathways and inform decision making. We found the need to clearly communicate the values and benefits of experiential futures to facilitate building awareness and trust. We designed a case study in the form of a zine to show what an experiential future such as HeatCon can look like and communicate the value for climate policy.

There is a tremendous potential of experiential approaches that surface emotions – a core competency of the cultural and creative economies – for transformative governance and transformative climate adaptation in particular. Creatives are able to bring a mindset relevant beyond the creative spheres and should be involved in transformative governance and climate adaptation. As climate impacts are disproportionately experienced by disempowered communities, also within Europe,

experiential climate futures provide a working framework to incorporate these voices for a just, transformative climate adaptation.

Potential Next Steps

Deepen Futures And Social Science: As this was an early stage exploratory research with limited resources, it could be extended with a more extensive futures, qualitative and ethnographic research.

Co-Create Experiential Futures With Policy Makers: In a subsequent experiential climate futures process, move from experiencing to exploring, co-creating and experiencing a scenario together with policy makers (e.g. in the form of a 10-day residency).

Design Systemic Interventions: Examine and shape climate resilience measures to include measures that address interconnected issues and have the potential to transform systems. This could include a community-led response, large scale rehousing, accelerating decarbonization and transitioning economic systems, among others.

Learnings from designing experiential interventions

In this section I have presented the development of three experiential interventions that looked at the question, How might these experiential interventions help climate practitioners to surface emotions about futures, and openly explore perspectives about barriers and opportunities that underlie assumptions about these futures. While they all deal with experiential scenarios, they present different ways of experiencing the scenarios.

Urban Heat Island Living: Berlin-Neukölln was an urban intervention and a non-linear storytelling experience in public space through large-scale posters and floor stickers. It used communication design in the form of speculative communication campaigns from the speculative organizations from the scenario narrative Berlin-Neukölln 2039.

Cooling Center was a pop up space as refuge from extreme heat for two minutes, two hours, or two days. It was a prototype of a space the speculative heat response network Hitze-Hilfswerk could set up and travel with across Europe, based on the scenario narrative Berlin-Neukölln 2039.

HeatCon is an annual gathering for climate practitioners to envision and embody radically resilient futures. It consists of three iterations so far, each with different formats for the experiential scenario and different intentions: Climate Futuring Weekend was a generative story making

workshop using creative writing and improvisational theater to explore everyday situations from hotter European cities. It was based on the original scenario narrative Berlin-Neukölln 2039. Heat Resilient Cities Conference 2039 was a live-action role-play inspired immersive gathering to support heat action efforts with local stakeholders. It used story-driven character role play to let people step into the shoes of future citizens. It was based on the adapted scenario narrative 'Berlin-Neukölln 2039'. As a change in narrative and format, HeatCon 2023 was an immersive gathering and performance for climate practitioners and creatives to infuse present-day climate adaptation conversations with long-term transformations. The immersive performance transported people in situations of resilient futures beyond the current view. It was based on the entirely re-futured scenario narrative 'Resilience beyond the current view'. Each of the experiential scenarios included a sense-making format to facilitate emotional processing among participants.

Surfacing emotions. The experiential scenarios surfaced emotions ranging from joy and curiosity to sadness, guilt, fear and frustration, and even ambiguous feelings such as “green.” Participants mentioned that hearing personal experiences, even if fabricated, made them “choke up”, feeling personally affected, and empowered. One collaborator suggested that only through experiencing the situations in role-play and seeing participants react made them shift from being theoretically aware to emotionally engaged. Rather than trying to elicit a specific type of emotion, we were aiming to elicit an emotional response without judging the quality of it. We chose emotions-based experience formats such as immersive performance, live-action role-play and character immersion, and creative writing and improvisation. We used the debriefs immediately after the experiential scenario to give space to those emotions and take care of one another if needed.

While HeatCon required a deliberate commitment from participants, demanding significant time and engagement, the public posters only needed attention, allowing for reflection later. The pop-up cooling center served as a middle ground, inviting casual visits. For HeatCon, I explored three different formats: the 2021 workshops encouraged active

imagination, storytelling, and character play, the 2022 larp focused on participants immersing themselves in their roles, and the 2023 immersive performance allowed participants to engage at their own comfort level. This made it particularly suitable for policymakers not familiar with experiential formats and those who might be more reserved. As an intentional gathering, it enabled us to customize both the immersion and subsequent conversations to suit the audience.

“When people were super quick to respond with personal stories, it made my throat choke up. ... [Even though] you knew it was all fake.”
—HeatCon participant (2022)

Shifting perspectives about barriers and opportunities. Participants mentioned observing new mindsets, such as a “turn[ing] our mindset away from scarcity towards abundance.” This was also visible when deconstructing the metaphor “balancing abundance” as a mindset shift from “Is there really enough for everyone?” to “it’s there, just unequally distributed,” or the “decarbonization marathon” requiring endurance, training, routines, cheerleading crowds and supporters in order to avoid burnout. Participants further mentioned the focus on collective imagination itself, anticipating risks to be prepared, “realiz[ing] the biases in our head, and [how] it shapes how we perceive the future and the solutions we might think.”

Changing the metaphors we use in our own speech has shifted our perspective on barriers (unequal distribution) and opportunities (rebalancing) within the team. How does this change their perspectives long term? We don’t know. It would have surely been helpful to check in with participants half a year after the experience. But even then, it’s hard

to track change and where it came from. Multiple participants have spun-off experiential climate scenarios and performances and some have joined later as collaborators. One of the participants of a 2022 HeatCon, a political organizer, went on to found a grassroots organization whose first goal was extreme heat (Roloff, 2023). Instead of asking about cause and effect, I prefer to look at interconnectedness. Our collective imagination plays a role in planting seeds for new ideas, which can manifest in various forms, such as projects, conversations, and shifts in attitudes.

Potentials. Experiential interventions have the potential to inspire and practice radical, collective imagination. They can help explore how it could feel to live in radically climate-changed scenarios and investigate pathways to long-term, systemic transformations within climate adaptation. They can surface assumptions about a future and the values behind them and open mindsets to new perspectives and connect it back to daily lives and work.

To make experiential interventions impactful, we suggest starting early in the decision-making process, inviting different perspectives, engaging with the unknown, and opening up about values.

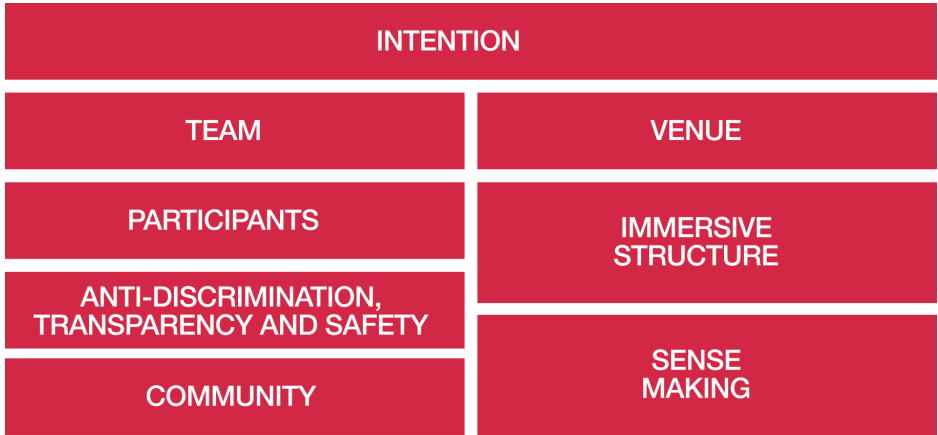
How experiential interventions helped surface emotions and explore new perspectives manifests in the key design decisions. HeatCon led to synthesizing the eight key decisions and creating the Intention Framework: Having a clear intention (1) for the intervention that will help define all other decisions, a team (2) whose decisions can act on that intention, a thoughtfully selected group of participants (3) embedded in an (inspiring) location (4), following an emotions-based immersive structure (5) and facilitated sense making (6), creating a safer space (7) for participants to process the emotions that may pop up, and hosting a (temporary) community (8).

Intention Framework

A living framework for designing for collective imagination

Throughout various iterations of HeatCon, together with the collaborators I have been exploring relevant elements of the experience, which I have finally consolidated into eight key parameters that serve as a “working framework” for designing experiential climate scenarios, comparing them, and visualizing the most relevant design choices. Though I developed it from HeatCon, I believe it can serve other types of experiential interventions.

Developing this framework was inspired by the Mixing Desk of Larp (Andresen & Nielsen, 2016). The intention-led art of gathering (Parker, 2019), and the experience design gatherings Stone Soup co-created with participants in an inspiring venue (Stone Soup, n.d.). I hope it can be a living framework where the key questions (or decisions) can change and be adapted to needs. Earlier versions included other elements that have now been consolidated, or simply other decisions for different intentions. I have tested the framework by applying it to other immersive performances and interventions, and tested it in two workshops with creative change makers at our project partners *Kompetenzzentrum für Kultur- und Kreativwirtschaft* and *Creative Impact Research Centre Europe* in the summer of 2024. What you are about to read is a work in progress, and an invitation to think about the crucial elements that influence the conditions you create for an experience.



INTENTION. In her book *The Art of Gathering* (2019) Priya Parker emphasizes the importance of setting a clear purpose for any gathering, the why. An experiential intervention is not just about getting together to explore futures, but *why* are we exploring these futures? For Parker, purpose is more than a category, such as a wedding, or in our case, a live-action role play, or a conference. It is also not generic like to celebrate love, but more specifically, it may celebrate a couple’s past and how they got together, or the new networks they have built since moving to a new city. The more specific the purpose can be, the better it can help make better decisions about the gathering: If there is a last available seat at the wedding, in the first purpose it may be given to a childhood friend; in the latter, it may be a new friend from work. Ideally, Parker suggests, the purpose should drive all aspects of the gathering (Parker, 2019).

Our intention serves the same purpose. The intention is the clear, unique aim for an experiential intervention. Though all HeatCons explored climate scenarios, they each had a different, unique aim:

- ➔ 2021: Explore everyday situations from hotter European cities.
- ➔ 2022: Support heat action efforts with local stakeholders.
- ➔ 2023: Infuse present-day climate adaptation conversations with long-term transformations.

When we were explicitly working with the intention and this framework for HeatCon 2023, the intention informed the other decisions. This does not mean that the intention was 100% clear from the start, it was rather a process of going back and forth as we were making other decisions and asking ourselves: What is our intention for this gathering?

TEAM. The team will define the outcome because different people will prioritize different things and make different decisions. In 2021, my collaborator Francesca and I were both systems, service and experience designers and researchers working on climate mitigation and adaptation. Because we wanted to practice more creative writing and improv, we invited Geoff, a coach to facilitate that. In 2022, as we needed to reassemble a German speaking team and deepen our expertise, I chose an expert in eco-social transitions and an expert in designing learning experiences. In 2023, as we were looking to get a grip in current adaptation conversations, we invited an expert in municipal heat adaptation plans, as well as a skilled facilitator-gatherer with diverse professional and lived experiences to create a safer space. We also invited a communication expert who has worked with government agencies to help communicate about HeatCon and recruit the right people. Lastly, we also invited an immersive playwright to further develop the experience into a performance.

PARTICIPANTS. What is in the heads of participants will define the imagined and embodied situations at the experiential gathering. For example, when the experience design gathering Stone Soup (Stone Soup, n.d.) had more chefs, there would be more focus on dining experiences, when there were more escape room makers, there were more puzzles and scavenger hunts. A HeatCon with more actors and improvisers focuses more on embodying characters and their interactions, one with more people who consult on transformation processes would lead to more meta-level discussions about transformations outside of the scenario. When we wanted to advance local heat resilience in Berlin, we made the choice to gather people based in Berlin, working on the ground in different but related fields, such as services for unhoused people and designing urban spaces. When we

wanted to infuse current conversations on adaptation with long-term thinking, we included policy consultants who work on adaptation projects.

VENUE. An inspiring venue can set participants in the right mindset and contribute a lot to the imagination, and should fit the size of the group. In 2021 we were at a small chapel that stayed cool inside on a hot July weekend, truly contributing to the experience of a cooling center we just explored in an improvised situation. The church we were in in 2022 was the co-op center in our scenario and one of the locations of change itself, in 2023 we used the same church and played with the site-specific elements of the circular meeting space, side rooms and the gallery.

ANTI-DISCRIMINATION, TRANSPARENCY AND SAFETY. We cared a lot about creating a safer space in relation to emotional and physical safety and actively anti-discriminatory behavior. We tried to be as clear as possible about what the experience is about without giving it away, as not every experience will be for everyone. For example, people who have not experienced an extreme heatwave or another emergency might respond to a simulated situation like those who have. We gave high-level trigger warnings – such as climate change, deaths – clearly stating what we can and cannot offer to care for. For example, holding space for community processes, not providing professional psychological care, in case of climate anxiety. We made sure to check in with one another during the debrief, make sure participants know whom they could talk to at any point during and after the experience and make it easy for them to do so, and know that they can step out any time. The space was wheelchair accessible and we made our Covid-safety guidelines clear, and took care of food or snacks and drinks during longer experiences. We assembled the participants looking for diversity based on criteria we defined beforehand. We asked everyone if there is anything specific they would need, and offered financial support for travel expenses as well as replacing care responsibilities or waged work – no questions asked – to make that financial support as easily accessible as possible. If there are photos or videos taken, which was not often, people could opt out but still participate fully. If there is a contact list, we let people share how they

would like to be contacted, and as they reach out to someone, to ask consent to the type of connection.

IMMERSIVE STRUCTURE. Under what pretense do the participants step into the fictional world to help them ease the transition in time and rules of the world, and what experiential format do we choose for the experience? In a co-created, rapid prototyping process of devised theater, we have explored settings such as simulating a heat emergency in a cooling center that would focus on the emergency response, an annual gathering of resilience workers that would focus on re-skilling, to a conference format that allows “site visits” to various points in time and fictional situations, while maintaining a veil of a formal conference. While generative methods worked well with creatives and people open to improvising on the spot, role-playing allowed people to develop a deeper sense of empathy with a future character. The immersive performance let people experience situations even if they chose to stay back and remain themselves.

SENSE MAKING. How do participants process the experience on an emotional rather than intellectual level? As getting people truly on board requires not just intellectual explanations, but emotional connection (Jain et al., 2019). Over the years we tested various emotional after-care and debrief sessions to facilitate emotional processing. For instance, showing where the feeling sits in their body, letting people share what about the experiential scenario they considered desirable and probable, probable and improbable, as well as deconstructing the metaphors behind key transformations from the scenario, exploring the associations, values and worldviews behind them.

COMMUNITY. Creating a community out-of-world, even if only temporary, to encourage people connecting and exchanging to facilitate further processing, and whatever else participants may get out of it, while keeping in mind that we would not have the resources to maintain an ongoing community. In the past, we have included long breaks, organized meals and hosted picnics, and hosted an open space at the end of the gathering for participants to suggest something to the agenda

– eg. a round of introductions with their jobs (which we as organizers chose not to include to create a more level playing field from the start). In the past, we have organized messenger groups and shared email lists for people who opted in to connect, participants have created messenger groups themselves, hosted smaller gatherings, and kept in touch to help each other out.

What else? I hope that whoever chooses to use this framework to design experiential interventions, or aspects of it, will adapt it to their needs. In the past, participants have suggested “care.” Additionally, testing the framework with change-makers I found it helpful to prompt participants to think about the imaginative potential of their interventions before applying the framework to their projects.



BUILDING AN IMAGINATION COLLECTIVE

In this chapter, I describe the explorations on how groups can organize the work of collective imagination (research question 3), and the process of building a creative collective for imagination and transformative climate adaptation, Urban Heat Studio. This resulted in the “Living Handbook” for our imagination collective based on sociocratic principles. This includes our theory of change, our living principles and values, a circular structure for the collective, role-based working, structures for a weekly workshop, transparent project planning and asynchronous communication, as well as a seasonal approach to work that balances creation, gathering, reflecting and resting.

There were two travelers passing through a village. They had been on the road for a long time and gotten weary. They were tired and hungry, and so they knocked on the door of the first house they saw. When the door opened, one of the travelers said, “We are just passing through town. Would you have some space for us to sleep, and some food for us to eat? We will be gone in the morning.” But the stranger responded, “Our house is tiny and we’ve no food to share, there is little enough for us as it is!” and turned the travelers away. They knocked on another door, and then another – but the response was always the same.

The travelers eventually went to a river and picked up a stone, all round and shiny. They started washing the stone as a villager walked by and got curious, “what is it that you’re doing there?” They responded, “we want to make a stone soup. You could help us – if you only had a pot!” And the villager responded, “but of course I have a pot! I can go grab it.”

More people started walking by, intrigued by the pot simmering over a little fire that the strangers had filled with the stone and water. And they too asked what the travelers were doing. “We are making stone soup, and you could eat with us if you’d like. What would make it even more flavorful is any food you may have to spare.” The villagers immediately started offering: “I have a couple of carrots at my house, I can bring them!” The next person offered onions, another one mushrooms, another had some cabbage and yet another fresh herbs for garnish. They threw it all into a pot and let it simmer for a while. Together, the travelers and the villagers cooked a stone soup, and shared a hearty, warming meal together.

This is the fable of Stone Soup, a European folk tale first accredited to the French writer Madame du Noyer (Madame du Noyer, 1720). To me, what happened in the story is that two strangers facilitated the making of something – not entirely out of nothing, but close to it, and what they ended up with was greater than just the sum of its parts. In other versions of the story, it has been suggested that the travelers were charismatic and that’s how they managed to convince people, or that they tricked the villagers. But people weren’t tricked – they knew that you cannot make a soup out of a stone (Rubel, 2015). People knew that the travelers had nothing of their own, and yet they joined in hope for some entertainment and community. What they joined for was the experience.²³

One of the other writers, Barbe, suggested that the story is not truly about soup but about character, or as he described it, *d’esprit*–spirit: “On thousands of occasions, to get oneself out of a problem, a little spirit is necessary.” (Barbe in Rubel, 2015)

Building the collective always felt like gathering people to make Stone Soup. Here is our recipe.

²³ Since 2019, I have been going to what you could call co-organized design camps without an agenda by the name of Stone Soup, and I have been part of a community of creatives who choose to gather for an extended weekend to create experiences for one another. Stone Soups have happened roughly every year in a different location—whenever a group of people decides to find a location and gather 25-40 people. Once we get there, we are all organizers, and there are no pre-scheduled events apart from meals. All activities, from journaling sessions to mud walks, experiential dinners and role-playing games, are organized by the participants on the spot. Every gathering has a set of guiding principles, such as radical inclusion, enthusiastic consent, transparency and honesty, bias to action, active listening, flexible hierarchy, radical interdependence, and reflective learning. Stone Soups have been initiated by different groups of people following roughly the same recipe, but always adding their own spin on it. www.stonesoup.live



URBAN HEAT STUDIO

Imagination collective for
transformative climate adaptation

2023 HeatCon team (pictured, from left to right): Janna Jung-Irrgang, Francesca Desmarais, Franziska Lindner, Juli Sikorska, Jelka Wickham. Not pictured: Rishikesh Tirumala, Ștefan Peca, Stuart Candy (advisor)

2022 team: Juli Sikorska, Julius Falk, Janna Jung-Irrgang, Francesca Desmarais

2021 team: Juli Sikorska, Francesca Desmarais
Supported by Ervin Parashumti, Geoff Mills, Dan Lockton

Context

The studio collective organically grew from conversations and a loose collaboration on passion projects with a former collaborator of mine, to a collective of eight people working at various commitment levels, supported by external project contributors (such as a photographer). The former collaborator – Francesca Desmarais – later became a co-founder at Urban Heat Studio, the creative collective for transformative climate adaptation and imagination. We'd joke that the studio is half-real, half-imaginary – it started from a speculation on "What if there was a space in a city dedicated to transformations and the imagination?", and we quickly created a version of the speculation that would work for *us*. But of course, we did real projects, and the speculations brought up real feelings and real responses to our environments, and in early 2023, we were even part of a startup accelerator at Impact Hub Berlin, where we developed our collective organizational structure and the elements that turned into the Living Handbook. Everything we did at the studio challenged my perception of what work can be, and I am forever grateful for the creative partnership and ways of working and being that Francesca and I developed together between 2020-2023.

Intention

I didn't mean to start a studio collective. We did because it started to make sense to do the work of collective imagination *collectively*. Because it's complex and more (carefully selected) people can provide better expertise and practice than one person, because together we create more than just a sum of all parts, because it provides energy and motivation, and we learn from each other. I believe that a well-rounded team will explore, iterate, and adapt to produce better work than an individual. And because most of the work towards change that I see happens in teams, I wanted to harvest insights from this PhD research that would be relevant for team projects. I find collaboration so important that I'd want to say the team is more relevant than the idea they start with.

As a team, we decided to shift from a loose collaboration (2020-2022) to a studio collective (2023), and explore what an initial speculation of an organization embedded in a city to explore long-term climate adaptation through imagination could look like.

Over time, we learned how challenging it can be to practice collective imagination. These challenges go beyond the focus on pragmatic solutions and being conditioned to limit the horizon of what seems possible (Finn & Wylie, 2021) that I addressed in the earlier sections. Existing power structures can lead people to believe that there are no alternatives (Unger, 2024), and there is a lack of safer spaces where people feel comfortable to explore new ideas. The point is to challenge dominant visions of the future and provide alternatives. This is a way to develop future visions that are diverse and actively support marginalized groups. While collective imagination takes effort, it is also an opportunity for personal and collective growth.

Research Process

Starting from an individual research project on making climate scenarios of European cities tangible, I started collaborating with Francesca Desmarais to complement our expertise and perspectives that would go into creating collective visions and inviting others to bring them to life, to shaping an intentional imagination collective. The process was organic and emergent, and inspired in collective, non-hierarchical organizational structures.

1. Loose project-based collaboration and joint experiments

The collaboration began with a shared interest in climate, systems, futures, and design. I had been exploring climate scenarios and speculative design in design and art projects, and Francesca was leading climate adaptation projects at the Copenhagen Institute of Interaction Design, where we had met a couple of years before through a different

project. We had similar questions, had explored slightly different approaches, and started by having conversations about our explorations.

Our first collaboration was when I was asked to conduct a Climate Futures Literacy workshop for a climate innovation consultancy, and I invited Francesca to join me. We had built this workshop based on a generic scenario, and wanted to develop a more context-specific scenario of European cities for us and the people we worked with, which led to our first futuring project and the scenario narrative Berlin-Neukölln 2039. The subsequent experiential intervention was Climate Futuring Weekend. In parallel, I explored collaboration with other people, and Francesca and I continued our conversations.

2. Forming a first local team

The need to expand the team grew organically from a practical challenge: while Francesca was based in Copenhagen and didn't speak German, but with the Heat Resilient Cities Conference 2039 we wanted our work to reach a German-speaking audience. Rather than simply hiring German-speaking facilitators, we saw this as an opportunity to deepen our expertise and build a more diverse team.

Inviting new collaborators was intentional and relationship-based. I brought in two new team members with complementary expertise: a sustainability transformations expert with creative inclinations, and a learning experience designer deeply embedded in social welfare networks. I had previously worked with both new members, we were able to quickly align our working styles, and we all shared enthusiasm for the project.

The onboarding process reflected our commitment to imagination and experiential learning: New team members first experienced a remote version of the *Heat Resilient Cities Conference 2039*, immersing themselves in the project's vision. This was followed by an in-person session where they could get to know each other, and design their roles within the imaginary Urban Heat Studio – I had just started envisioning as

an organization within a city dedicated to climate adaptation and building imagination capacity. We also began practical project planning and distributing roles and responsibilities.

This first project inviting new collaborators into our existing structure and fictional world we had created made us reflect on balancing our existing and new working styles, perspectives, and lived and professional experiences we bring in.

3. Developing an organizational structure

As my research projects and our experiential interventions matured, Francesca and I explored directions for formalizing our collaboration and making Urban Heat Studio a reality. We wanted to bring in additional perspectives to embed in our collective imagination work, and were inspired by collective organizing structures such as sociocracy sociocracy (Endenburg, 1998) and the self-organized immersive experience community Stone Soup (Stone Soup, n.d.).

Our first step was formalizing the core partnership. After two years of loose collaboration, the team needed to find an unconventional form that would honor our existing dynamics while providing clear structure. As such, we developed a flexible collaboration structure where we as the core members estimated specific time allocations (90% Juli and 10% Francesca), and allowed each collaborator to join on their own, explicitly defined terms.

To inform our organizational structure, we conducted interviews with people practicing non-hierarchical and collective ways of working. This included a coach specializing in sociocratic working structures, a designer from a Finnish collective focused on social impact, and an organizer from Stone Soup, an immersive experience community. These conversations helped shape our key organizational elements:

- Regular team meetings with a structure anyone could facilitate.
- Consent-based (rather than consensus-based) decision making based in trust to preserve energy.
- Minimal but effective meeting structures.
- Principles defined as aspirations rather than rigid rules.

Based on how we had been working together so far, Francesca and I defined a set of principles as aspirations of what we wanted the collective to be. The principles “Gracious Emergence”, being “Extraordinarily Untraditional”, and “Doing Our Best Work” resulted from our aspirations to trust ourselves and our intuitions. They were also a refusal to be limited by conventional approaches, and working in the ways that worked for us. We additionally defined values for interacting with collaborators, inspired by the Stone Soup principles (Stone Soup, n.d.).

In this process, we defined a vision for the year that we translated into milestones to guide the year, and developed a seasonal approach, flowing with the natural seasons. We developed a brand to manifest the energy we wanted to represent, and create visual guidelines for our work.

4. Inviting new collaborators, following a full Season

As we grew the collective to include more collaborators to re-future the scenario narrative Resilience beyond the current view and host HeatCon 2023, we looked for ways to build on our existing values and the culture of imagination we had been building, while creating space for the collaborators joining us for the season. New collaborators ranged from a climate health NGO worker to a personal development coach and a playwright.

To onboard new members to the collective, Francesca and I developed a Living Handbook documenting our ways of thinking and working, created a team forming session, and translated values into team rituals, including eg. how we each like to deal with conflict.

Working with new collaborators, such as the playwright, forced us to distill our scenario narrative into concrete scenario elements to design the experience around. Working with new project partners who were particularly interested in the intersection of the creative industries and transformative governance made us reflect on the potentials of experiential interventions and the conditions to make projects successful. Additionally the focus on anti-discrimination helped us explicitly define the criteria we focused on to create diversity for our specific intention, and embedding it into the Intention Framework.

5. Mindful conclusion

After HeatCon 2023, Francesca and I decided to pause the collective's activities. This allowed us to explore another question we had always considered: What if organizations had an expiry date? (Desmarais, 2020).

Our wrapping up process included completing existing projects, conducting final reflections on learnings and what we would like to leave behind. We explored the possibility of designing a toolkit and transforming the Urban Heat Studio back into its fictional form. We decided that the HeatCon 2023 Case Study zine we had just produced was the visual documentation highlighting the potentials that we learned was needed. We believed that the most relevant thing to leave behind was the change we had seeded in ourselves, with collaborators and participants, and everyone who's interacted with our work.

Outcome: Living Handbook

How we believe change happens

We believe that change happens when we collectively imagine radically different worlds to today. When we manage to think beyond the obvious responses and behaviors.

We will still have to go into the obvious first steps of adapting to a rapidly warming world to build resilience. But a deep resilience, or transformative adaptation as others have called it, will require us to take a more radical view of what is possible (Pelling et al., 2015). This means going to the roots of interconnected issues, and being more bold, more daring about where it could go. It will take leaps and overshoots because change doesn't happen in linear paths.

Maybe change doesn't happen fast enough because it's really hard, or because we are not yet collectively imagining that we are going there. And so we need to explore: What happens when things get really weird, go really poorly?

We need to allow ourselves to work through thoughts we didn't want to think before, and imagine new paradigms, collective values, rituals, behaviors, and actions.

We need to feel safe to go there, and know that we are here for each other to catch each other if we fall. We need vulnerability to allow ourselves to feel these feelings. We need to feel that we are allowed to feel them, and we are allowed to feel love – and love and connection will help us build better policies and communities.

We need to bring these new mindsets into our everyday lives, and have a safe space that we can come back to, and feel less alone, less awkward, more together and more weird in the process.

Living Principles

Building the collective requires gracious emergence, being extraordinarily untraditional, and doing our best work. What we mean by this:

Graciously emergent. Observe, sense and respond to the world around us. Discovery over invention. Allow ourselves to experiment, and feel gracious and confident over the process and creations.

Extraordinarily untraditional. Disregard conventions, question best practices, try new approaches.

Doing our best work. Give our creations the deepest care and attention. Make sure the time we dedicate is high quality. To feel okay to sit out or ask for help if we are tired or distracted.

Living Values

Being a collective requires trust, curiosity, and seeking out things that energize us. These principles are a suggestion for the collective we want to be:

Flexible hierarchy. Roles, not titles or hierarchies. Take on responsibility and own your tasks. Everyone is invited to take action, and we take an active stance in leveling the playing field and try to empower everyone to step up. People can take on multiple roles, and roles can switch from person to person.

Transparency and honesty. Be respectful, compassionate, and honest with yourself and others. Speak your mind, contribute authentically, and have pure motives.

Curiosity. Approaching our roles, projects, and tasks with childlike excitement and hunger to discover something new.

Enthusiastic consent. Do if the doing is rewarding. Seek out things that give you energy. Prioritize activities that make you feel alive.

Diversity and Inclusion. Seek out diversity of ideas. Be clear about your purpose, who is invited and who is not. From those invited, watch out that nobody feels excluded and that your activities and interactions are open for other people to join.

On Principles and Values: As people, we bring values with us. We cannot decide to live by different values – we can only question them, reflect, and observe that change. What we can agree on (as individuals, or a group) are principles that we chose to guide us.

Our principles are aspirational – they demonstrate how we strive to be, and inspire us to do so. Once they become established, they can make space for new aspirations.

Our values are how we want to interact with those around us – our collaborators, participants, project partners, and anyone who crosses our path.

These are our living principles and values – we expect them to change. The goal is to review the principles and values each year and re-define the aspirations for the coming season.

Circular structure

MEMBERS

The people who are part of the collective, who dedicate themselves to do their best work within the collective. They make decisions in consent-based meetings.

COLLABORATORS

People starting out with the collective – temporarily until they join the collective as a member, or one-off active collaborators.

NETWORK

Our past collaborators, partners, participants, friends and others who are around us whom we are aware of.

THE WORLD

Our mostly unknown audiences: visitors to public events, readers of the dispatches, audiences on social media – people we are not explicitly aware of. Most likely our networks and those of our partners and those based where we are.

On Circular Structure: Sometimes a newly made friend or a new project partner would say, "I saw your [posters / event / ...] and I wanted to [say hi / request you for a project] and that someone from the world would become part of the network or even a collaborator, and we think it's beautiful.

Roles

Our projects are broken down into roles (and relevant ownership) that anyone can take up. A role's only responsibility is to facilitate the process, and gather the people to carry out the tasks (the person with the role can participate in this as well). Unlike titles that stay, roles are flexible and can change – a collaborator who owned production of the immersive gathering one year can own finances the year after, etc.

Examples of past roles in a project

- **Onboarding and intention setting**

Get new studio collaborators into HeatCon. Help them find their place in the world, their role within the Urban Heat Studio, and responsibilities for the conference.

- **Organizing support**

Get the support we need. Do we need actors? Graphic design? Materials printed and delivered? Transportation organized? A technical expert? An uninvolved person for emotional support, or a quick getaway to the lake to cool off our heads?

- **Recruiting participants, selection and coordination**

Designing the application, selecting, defining who is coming, managing dropouts and waiting lists, suggesting participant transportation, extra arrangements (allergies, etc.), sharing venue details with participants.

Weekly workshop

We have a weekly workshop where we work collectively out our biggest questions. One person facilitates the weekly workshop that follows the same structure every time, so that anyone is able to step up and facilitate.

CHECK IN. One person suggests a reflective question or activity (creative or care-oriented). If nobody had a question, in the past we have played a round of the imagination game *The Thing From The Future* (Situation Lab, 2015).

SHARE relevant updates regarding a project or the collective. Share written updates in the online spreadsheet for everyone to see, reduce spoken updates to the most relevant information and reminders.

DISCUSS open questions. Whoever brings a discussion question can ask for what they need – get information, brainstorm, or something else.

DECIDE. Once the group has gathered information, we make decisions based on consent. We trust that people make decisions to our best knowledge and intentions. Whoever brought up the decision may make a suggestion, remaining people can agree, ask for more information, or veto.

WORKSHOP. Collectively work on the most relevant challenge. This may include gathering existing information for a research project, ideating and sketching first design ideas, or reviewing a project near completion with

fresh eyes. We aim for the collective workshop section to take at least half of the weekly workshop.

Project manuscript

We keep a spreadsheet as a project manuscript with all relevant information to a project, and further links. For a HeatCon, such a manuscript may include a tab with links (to other tools), team principles (with co-created team care rules), weekly workshops, roles/quests, project budget and plan, event plan, signups and participants, and other tabs.

Asynchronous communication

We have a permanently open Zoom room that anyone with the link can join. We see each other weekly on Zoom for the weekly workshop, and additionally as needed. In the past, we had a voluntary daily check-in for accountability (sharing intentions for the day) and co-working.

We use Telegram for in-between chats and updates, organized in channels such as:

-  **UHS Studio** (Members)
-  **UHS HeatCon Orchestration 2023** (HeatCon collaborators)
-  **HeatCon 2023 Scenario** (Refuturing and open to HeatCon collaborators)
-  **UHS Seeds & Signals of change** (open to all current and past collaborators)
- + Personal chats**

Seasonal Approach

We approach the year as a living organization, flowing with the natural seasons and collaborating with others within the climate “ecosystem.”

Spring: Nurture the sprouting of many new shoots, exploration and shaping strategies for the year: re-futuring, re-visioning, re-immersing. We curate a small group of experts from the climate adaptation and creative communities to collectively frame this year’s focus. We develop a new scenario, review it with our experts, and define directions for remaining annual activities.

Summer and Fall: Produce the core activities of the Studio, harvest stories, commitments, and learnings. The Conference is where we actively seek out and engage multipliers – people in crucial roles in climate adaptation and collective imagination, resilience practitioners and creatives alike – and build a community of practice. To nurture this community and grow it, we share our practice of imagination on an ongoing basis through public events (explorations, pop ups, book club) and social media. We draw from our scenario work and the ideas they spark in our network to shape remaining activities, such as explorations and special projects, and actively seek out communities, organizations and people we would want to collaborate with.

Winter: Reflect and recover. We synthesize key reflections on our core practices, revenue directions and collective structure, in order to fill the gaps and expand on new opportunities in the following year.

Reflection

Based on individual and team reflections and auto-ethnographic writing, I have gathered reflections that helped shape the collective. Just like the process, this reflection is heavily intertwined with the reflection for the Two Scenario Narratives and Three Experiential Interventions. Here, I tried to separate reflections that only referred to building the collective.

The work of collective imagination is climate work. Collective climate imagination catalyzes climate action, and complements the practical and pragmatic approaches to climate action, such as low-carbon technologies, climate adaptation measures, building community gardens and support networks. Collective imagination can help uncover and redirect mindsets about change, possibilities and barriers, and question deeply held worldviews and assumptions about possible futures. Future “images often serve as the basis for actions in the present” (Dator, 2005). This aligns with the Transition Design Framework which includes practices for visioning – seen as a crucial step in formulating solutions in the present – creating pathways of change, designing interventions, and an iterative process including waiting and observing (Irwin, 2015). Our experience showed that when people collectively imagine different futures, they begin to see their present actions differently. The act of collective imagination becomes a catalyst for social change, transforming abstract possibilities into tangible aspirations that guide current decisions and actions.

The collective as a greenhouse for visions. Our approach to collective imagination was intentionally focused on developing visions in the collective and inviting others in to embody them. By taking on the role of generous authority (Parker, 2019), we offered everyone who engaged with our imaginary worlds the option to explore them, and fill them with their own experiences.

Trust as Foundation. Trust emerged naturally through a great past working experience, consistent demonstration of commitment within clear boundaries. The team members consistently showed up for each

other, produced high-quality work, inspired one another, and genuinely enjoyed their collaboration.

Clear Structure with Flexibility. The 90%/10% split between core members provided a clear baseline for both time commitment and compensation, while allowing for project-based adjustments. Having those clear guidelines on time and compensation was important to us, as Francesca and I noticed early that we had very different needs and abilities to contribute. Furthermore, I had neither experienced such non-hierarchical and flexible ways of working in paid work, nor having shared conversations about finances and compensation. Throughout all projects at the studio, it found it important to make financial conversations explicit, and reflect with the team.

Values in Practice. Guided by the principles we defined, as a team we were dedicated to regular reflection, explicitly translating values into behaviors, and a balance between exploring the collective structure and doing the research and project work. Our approach to diversity and inclusion was an integral part of the work, embodied in the Intention Framework.

Working with our principles and values also brought up practical questions. To use the example of enthusiastic consent, it would mean that every task on someone's list would have been chosen by them, or at least answered with an enthusiastic "yes!" But what if nobody wants to take on a certain task? If nobody wants to print name tags for the conference, maybe we don't need them after all, maybe we still have other, more important tasks, or maybe it will become more important later and someone chooses to do it. This brings up questions of who sees a task as a task, and how the ways each of us have been socialized influences that. If it's a task like recruiting policy makers for an immersive gathering, it brings up questions whether we can work grant-based if this was a task explicitly stated in a proposal – and the implicit responsibility of the person who wrote the grant towards the project partners, and an implicit hierarchy that it created. Though it was a constant work in progress, the living principles and values provided a framework for

involving new collaborators and working self-organized in ways that worked for us.

Implicit hierarchies and responsibility. There's a lot of trust and creating our own conventions involved in this type of collaboration. Francesca and I developed our own collaboration culture over two years before synthesizing it in the *Living Handbook*, which has also led to some implicit hierarchy, distinguishing us as long-term members from newer collaborators who did not have the same level of familiarity with projects and underlying concepts and values. We tried to make these explicit through the *Living Handbook* and branding guidelines. There were also hierarchies between Francesca and me; while we shared strategy and shaping projects, I took on a significant portion of the workload and responsibility, making commitments to project partners in proposals.

Frustrating Process. While collective imagination aims to liberate our thinking from current constraints, it simultaneously exposes us to friction and emotional labor, and it can be a frustrating process. Imagining radically different alternatives is challenging in itself. The personal and political dimensions of collective imagination work are linked, creating both its power and its challenges. When people bring their passion and commitment to these spaces, they also bring their whole selves – their hopes, fears, and personal stakes in different possible futures. This vulnerability, though uncomfortable, is precisely what makes the work powerful. I initially found it frustrating to see different visions collide; however now I see this as an indicator that the process is surfacing and challenging assumptions that people may have. The emotional investment, while essential for authentic engagement, requires careful attention to care practices to avoid reproducing patterns of burnout common in activist spaces. This suggests a need to reimagine not just futures, but the very infrastructures and rhythms through which we do this imaginative work together. Both our seasonal, perennial approach to imagination work, and the emerging field of imagination infrastructuring (Robinson, 2023) points toward this.

Learnings from building an imagination collective

In this section, I explored how to organize the work of collective imagination, and introduced building an imagination collective.

Urban Heat Studio is an imagination and design collective for transformative climate adaptation based on the concept of sociocracy (Endenburg, 1998), inspired by the self-organized immersive experience community Stone Soup (Stone Soup, n.d.).

It started from a speculation itself, asking what if every city had an organization dedicated to the imagination towards transformative climate adaptation. I sketched out a vision for such a creative studio, the projects it could implement, and who the human and non-human collaborators would be – and together with my collaborator, we took the speculation seriously.

The collective developed organically throughout the four year practice-based research process of futuring two Scenario Narratives and designing and facilitating three Experiential Interventions. Because collective imagination requires diverse perspectives, it went from an individual endeavor and a loose collaboration, to a formalized collective with two members and seasonal collaborators to research, design and produce studio projects.

As Francesca and I were onboarding new collaborators for the 2023 season, we were looking to make the working and imagination culture we developed more explicit. We developed a series of strategies and tools to practice self-organization with flexible hierarchies, synthesized in the Living Handbook. This included a theory of change, living principles and values, a circular organizational structure, role-based collaboration, a weekly workshop structured for collective decision-making by consent, a shared project management structure, asynchronous communication, and a seasonal approach to a year's work.

Theory of change. For us, change occurs when we collectively imagine radically different worlds. Initial steps may involve adapting to climate change, but deep resilience requires more radical thinking. We assume that change is non-linear – it involves leaps and overshoots. The slow pace of change may be due to difficulty or lack of collective imagination, including exploring extreme scenarios, including negative ones. We believe that we must imagine new paradigms, values, rituals, behaviors, and actions, and create safer spaces for vulnerability and uncomfortable thoughts. We need love and connection to build better policies and communities. We need to integrate new mindsets into everyday life, and a supportive community to feel connected in this process of change.

This is why we chose to create interventions in the team and then invite others to join in, and then invite participants. We chose to invite people into ready-made worlds that we developed collectively. We've seen participants become collaborators for a season and imagined the collaborators to become members after the season. We saw it as a circular and cascading process that would allow us to build our internal imagination culture, and assemble the right perspectives, skills and mindsets for each season.

Living principles and values. To guide how we work together we defined a living set of principles and values to review and rewrite every year. The aspirations that Francesca and I synthesized from our work turned into the three principles for the collective: being graciously emergent, extraordinarily untraditional, and doing our best work. In our

collaborations we wanted to practice flexible hierarchies, transparency and honesty, curiosity, enthusiastic consent, and diversity and inclusion. This also defined how we chose to invite people as collaborators, how we shaped projects, and manage our energy in day-to-day work. This also highlighted practical challenges, for instance related to enthusiastic consent. It questions what happens if no one wants to take on a task, and then, whether it's truly necessary. We were aware that individual perceptions of what tasks need to be done are influenced by socialization and the responsibility held for a project. Nevertheless, the principles and values provided a framework for involving new collaborators and facilitating self-organized work.

Circular Structure. We worked with the metaphor of a band for our collective, seeing core members of the collective as permanent band members and including additional perspectives and skills through collaborators, and let the collective develop organically. This allowed all collaborators to show up in a way that suited their abilities and circumstances, accommodating varying levels of resources and needs – both in terms of time and compensation. There's a lot of trust and creating our own conventions involved in this type of collaboration – Francesca and I developed our own collaboration culture over two years before synthesizing it in the *Living Handbook*, which has also led to some implicit hierarchy, distinguishing us as long-term members from newer collaborators who did not have the same level of familiarity with projects and underlying concepts and values. We tried to make these explicit through the *Living Handbook* and branding guidelines. There were also hierarchies between Francesca and me; while we shared strategy and shaping projects, I took on a significant portion of the workload and responsibility, making commitments to project partners in proposals.

Roles. To reduce hierarchies within the team, we worked with flexible roles rather than permanent titles. The responsibility of a role is not to carry out all the activities, but to facilitate the process. Just because one person leads re-futuring in one year does not mean that they would lead that process in the following year, and roles don't need to be distributed based on experience only, but on curiosity.

Weekly workshop structure and project manuscript. To foster flexible hierarchies, we developed a structure that would repeat every week – check in, share, discuss and decide, and workshop. Anyone could step up to facilitate the weekly workshop, and decisions were made by consensus rather than consent.

Project manuscript and asynchronous communication. To collaborate in a more self-directed way, the project manuscript provided transparency for everyone involved, including project planning and progress on specific roles. Apart from the weekly workshop and individually scheduled meetings, the remaining collaboration and communication could happen asynchronously.

Seasonal Approach. We approached the year as a living organization, flowing with the natural seasons – starting a season in the spring by re-futuring and sewing our seeds for the season, growing projects and harvesting results in summer and fall, coinciding with our annual event HeatCon, and taking the time in winter to reflect, rest and recover.

Urban Heat Studio was an emerging exploration, from the speculative to the real, and back to the speculative. Francesca had mused about expiration dates for organizations. As I completed the practice-based research for this PhD and we paused our collaborative work, we decided to wrap up the collective and move the Urban Heat Studio back into the fictional realm. This PhD documentation is also the final reflection for this collective work and my research.

CONCLUSION

Over the past centuries we have built a world that has improved standards of living for a highly visible part of the Global North, but this has pushed our planetary boundaries to the brink (Richardson et al., 2023) and was built on the oppression of underrepresented communities. The same thinking that got us here can't get us out. We need collective imagination and transformative action to break down structures and world views that do not work for us anymore.

We need practices of collective imagination

Researchers have long warned about the climate crisis, and proposed pathways to more resilient lifestyles. Community organizers, activists, policymakers and businesses have advanced climate action and adaptation, but change is not happening fast enough. We can only act fast though when we know how to do so. Past approaches and theories of change have been neglecting the critical role that imagination plays in shaping transitions. (Mulgan, 2020; The New Institute, n.d.). We need practices of collective imagination to navigate these unrecognizable times.

As I have shown in this reflexive documentation, collective climate imagination is one way of enabling climate action. Images of the future influence actions today (Dator, 2005) and our collectively held visions of desirable futures shape social change (Jasanoff & Kim, 2015). Creative practitioners and communities have leveraged this to actively guide transitions. Acknowledging that shaping worlds unlike the one we know is a science-fictional activity (Brown in Sands, 2015), imagining what is otherwise difficult and abstract in an embodied way, and bringing those ecological and social issues to life, speculative interventions have the power to infiltrate collective imagination and lead to social and ecological change. They bring people together to challenge existing social realities

and struggle for change, to envision futures that go beyond the constraints of current realities.

I conducted practice-based research to explore these practices of collective climate imagination, centered around three main research questions. Firstly, how might European cities radically adapt to extreme heat, and transform? Secondly, how can experiential interventions help people to surface emotions about futures, and explore perspectives about barriers and opportunities that underlie assumptions about these futures? Finally, I asked how groups can organize the work of collective imagination. I gathered an imagination collective consisting of creatives and climate practitioners with diverse lived experiences to jointly shape visions. I invited more people related to climate, adaptation and transformations to embody those futures and question assumptions together. I used auto-ethnographic methods (Sparkes, 2002) to reflect on my research and produce reflective learnings. Given that these processes are highly context specific, and creative practices depend on personal and collective preferences, consider this work as one possible way to approach collective climate imagination and answer the questions I posed – this is the way that has worked for us. As I conclude the investigation, I will revisit the practice-based research journey and the narrative presented.

For European cities to adapt to the climate crisis and transform, they must change their social, political and economic structures

I began by exploring how European cities could radically adapt to the climate crisis, and transform. I introduced two Scenario Narratives that both examined the concept of climate resilience, but manifested in different ways. The first narrative Berlin-Neukölln 2039 framed resilience as mobilizing social institutions, changes to the built environment, and practices of care and maintenance. It suggested building a collective heat

response, prioritizing social and ecological growth over economic growth, and caring for humans and other parts of nature and infrastructure. The second scenario narrative Resilience beyond the current view depicted resilience as community-led healthcare, retraining for post-growth activities, a decarbonization marathon, and climate safe havens. It addressed how climate impacts compound, the need for rehousing, and making sure everyone's basic needs are covered. This narrative introduced new metaphors, such as a decarbonization marathon, safe havens, and balancing abundance. As Lockton and Candy (2019) suggest, actively generating and embracing new metaphors can support transition processes. Instead of framing the conversation around "fighting" climate change – which raises questions about who we are fighting against – we adopted the metaphor of a decarbonization marathon. It's a far more uniting image, emphasizing the importance of preparation, practice and rest to avoid going beyond one's limits. "Balancing abundance" suggests that there is enough wealth in the world, but it needs to be more equally distributed, aligning with post-growth mindsets. Within the collective, changing the metaphors we use in our own conversations has shifted our perspective on barriers (unequal distribution) and opportunities (rebalancing).

Embodied and emotions-based approaches such as immersive theater and role-play help surface the emotions often overlooked in climate efforts, and create space for reflection

Emotional engagement in climate action has often been undervalued compared to intellectual approaches, but it's needed to fully mobilize people (Jain et al., 2019). Connecting everyday emotions to the sometimes slow signals of climate destruction can be challenging.

In the second section, I looked at how experiential climate scenarios can help climate practitioners surface emotions about futures and openly

explore perspectives about barriers and opportunities that underlie assumptions about these futures. I introduced three place-based Experiential Interventions. Firstly, a speculative public campaign featuring posters and floor stickers warning about extreme heat and suggesting an organization of traveling heat responders, among others (Urban Heat Island Living: Berlin-Neukölln). Secondly, a pop-up space designed as a cooling center for relief during extreme heat (Cooling Center). And thirdly, an annual gathering for climate practitioners to envision and embody radically resilient futures (HeatCon).

We surfaced emotions through embodied approaches that evoke feelings, utilizing interventions in public space (Wang, 2020), immersive theater (Warren, 2017), live action role play (Stenros & Montola, 2010), improv theater (Salinsky & Frances-White, 2013) and creative writing (S. Butler, 2020). While HeatCon required a conscious commitment from participants, demanding significant time and engagement, the public posters merely called for attention, allowing for later reflection. The pop-up cooling center offered a middle ground, encouraging casual visits. For HeatCon, I explored three distinct formats. Firstly, the 2021 workshops encouraged actively inventing stories, situations and characters. Secondly, the 2022 larp focused on participants immersing themselves in fictional future characters grounded in challenges related to heat resilience. And lastly, the 2023 immersive performance allowed participants to engage in experiential situations at their own comfort level, making it particularly suitable for policymakers not familiar with experiential formats and those who might be more reserved. As an intentional gathering, it enabled us to customize both the immersion and subsequent conversations to suit the audience.

Reflection and meaningful conversations can spark shifting perspectives that underlie assumptions about futures

We operated under the following assumption: immersion has to do lots of the heavy lifting, given enough time to work properly, but in the end, changing underlying assumptions about futures, perspectives on what is possible and what obstacles exist, depends on having high-quality conversations afterward.

In the purposeful gatherings at HeatCon we created space for participants to allow their feelings, and facilitated conversations. While the Cooling Center allowed for casual in- and out-of-character chats with the people who wandered in, Urban Heat Island Living didn't have an explicit space for reflection, and relied on the attention given to it by the people walking by.

At HeatCons, we prioritized emotional care after the experiential scenario to hold space for feelings, and we designed debriefs to connect participants' experiences back to their everyday lives and work. These debriefs varied from general ones and deconstructing metaphors to designing a custom debrief for sustainability consultants to connect it to their project work.

We can encourage participants to feel their feelings through gentle invitations, such as identifying where in their body they feel a sensation and articulating it, and we can engage them in conversations about metaphors as mental models for change. To explore long-term impacts of these experiences, it would be valuable to check in with participants a year later, or maybe five. But it would be imprudent to conduct "impact measurement" of collective imagination in an attempt to evaluate change in its entirety. An empirical approach that involves asking people, observing their actions and quantifying behaviors fails to encapsulate the full scope of change. As many people before me, I believe that change arises from the interconnections across issues and unfolds over time; it is

non-linear in nature. History, too, has not been linear, but as the fiction writer Kurt Vonnegut put it, “merely a list of surprises” (Vonnegut, 1991).

What I did observe after these projects was that several participants have initiated their own experiential climate scenarios and performances after joining ours, and some later joined us as collaborators. Both the collaborating playwright and improvisation coach have expressed how engaging with the scenario narratives has changed their understanding of climate issues and has got them curious to learn more and create works based within these imaginary worlds. The collective, and Francesca and I in particular, have expressed how envisioning and embodying these worlds has profoundly changed us and our values, how we articulate them and choose to live our lives. A political organizer who joined the 2022 HeatCon went on to establish a grassroots organization in which the first action group formed to work on heat action (Rolloff, 2023). Rather than focusing on cause and effect, I prefer to consider the increasing awareness and the expanding community of people addressing extreme heat, as well as the growing ability to engage with futures. Our collective imagination helps plant the seeds for new ideas, which can take shape in various ways—projects, conversations, or changes in attitudes.

As creators, we see the main potential of experiential interventions in inspiring and practicing collective imagination, and catalyzing climate action. These experiences help participants explore how it could feel to live in radically climate-changed worlds and investigate pathways to long-term, systemic transformations within climate adaptation. They allow us to surface assumptions about futures and the values behind them, open mindsets to new perspectives, and connect them back to daily lives and work.

The quality of change resulting from our collective imagination efforts depends on the intention. This intention shapes everything else. This ranges from the team needed, to whom to gather, to the choice of location and community to embed ourselves in. It informs the immersive structure and determines the kind of sense-making required. It also sets the criteria for what to look for when practicing active anti-discrimination,

transparency, and safety, as well as how (and if) to build community. I summarized these learnings from having designed five experiential interventions into a framework for designing experiential interventions, which I call the Intention Framework.

Organize the work of collective imagination collectively

Practicing collective imagination can be challenging. These challenges go beyond the focus on pragmatic solutions and being conditioned to limit the horizon of what seems possible that I addressed in the earlier sections (Finn & Wylie, 2021). Existing power structures can lead people to believe that there are no alternatives, and there is a lack of safer spaces where people feel comfortable to explore new ideas. The point is to challenge dominant visions of the future and provide alternatives; to develop future visions that are diverse and actively support marginalized groups. While collective imagination takes effort and it can be a frustrating process, it is also an opportunity for personal and collective growth.

So finally, I talked about how to organize the work of collective imagination. In the last section, I introduced building an Imagination Collective for transformative climate adaptation, Urban Heat Studio. For us, change occurs when we collectively imagine radically different worlds, and so we choose to build imaginary worlds within the collective, and to invite people to embody situations from those worlds. This is why in this section, I focused on the process of building the imagination collective that creates those visions. We defined our principles as what we aspire to be – and so for us, building the collective required gracious emergence, being extraordinarily untraditional, and doing our best work. To guide how we work together, we defined values of how to work with collaborators.

We worked with the metaphor of a band for our collective, seeing core members of the collective as permanent band members and including additional perspectives and skills through collaborators, and let the

collective develop organically. This allowed all collaborators to show up in a way that suited their abilities and circumstances, accommodating varying levels of resources and needs – both in terms of time and compensation.

Our work relied heavily on trust. We aimed to reduce hierarchies through our role-based approach, transparency in project management, a structured weekly workshop that anyone could facilitate, and asynchronous communication. However, we still observed implicit hierarchies between long-term members who had them have deeper familiarity with projects, distinguishing us from newer collaborators. While we shared strategic roles, I handled much of the workload and was responsible for commitments to project partners, adding to implicit hierarchies.

We worked as a living system flowing with the natural seasons – starting by refuturing and sewing our seeds for the year, growing projects and harvesting results, and taking the time to reflect, rest and recover.

Collective imagination can catalyze climate action

Collective imagination creates a bridge between abstract climate concepts and embodied understanding of possible futures. It allows for the relationship with the climate crisis to shift from mere observations from elsewhere and thought experiments to a tangible, albeit simplified, experience. It can help anticipate risks and develop responses we feel more confident in, similar to other present-day crises that manifest in more immediate ways. Gathering with others to imagine, rehearse and experiment with alternative futures, together people can constitute and embody shared visions for change, even those who work across different fields towards resilient futures in Europe. In other words, collective climate imagination is not a “nice to have”. Collectively imagining climate futures is the earliest form of transformative climate adaptation.

Big, messy feelings that resist easy descriptions – anger, frustration, sadness, powerlessness and hopelessness – are valid responses to complex challenges in the polycrisis. These emotions can serve as catalysts when they are given space to process them: first, through engaging with speculative fiction where others have explored similar emotions and shown how people collectively deal with challenging circumstances. Second, through practicing collective imagination: the role of collective imagination practitioners is to gather and facilitate – to help others imagine and embody visions that can be planned and implemented by those with complementary capacities. We need to envision before we can plan; and grieving, healing, sensing, dreaming and embodying are all valuable skills for individuals, communities and societies to develop. To practice care towards ourselves and our communities, to focus on our energy, so that the work can continue with strength and courage.

Concluding this research, I find myself both more and less scared than before. More so, because I am more attuned to interconnected developments, understanding how small changes led to significant damage in the past. Yet less so, because I have also seen how people have transformed seemingly intractable systems – from independence and minority rights movements to people collectively shifting political attitudes on the scale of nations. We may not know what is next, but collective imagination can catalyze more ambitious and transformative action. These practices create possibilities for people and communities to expand their sense of what's possible and necessary, leading to action towards more resilient and equitable futures. Having the tools, mindsets, and community around me makes me feel more empowered – I hope this work can inspire the same in others.

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APPENDIX

HeatCon 2023

Immersive Sketches

During a 10 day immersive theater residency with Kaimera Productions, Kaimera Lab Alumni Workshop (KLAW), I made these sketches of immersive, participatory, site specific situations. Further down are also some reflections and suggestions for our future work.

Sketches

1. **Heat Responder Aptitude Test:** You signed up to be a heat responder. You undergo a physical, cognitive and emotional training under extreme conditions with limited senses (45°C/113F sauna, eye mask) where you have to answer personal questions and respond to hypothetical situations, e.g. how would you respond if you see a possibly homeless person laying on the ground in 45°C heat in the sun at 11am. Based on your responses, you are assigned to the traveling heat responder crew, the local cooling center hosts crew, or a resilience building/backlines worker. Includes fun stuff like: [An AI-generated voice recording of an a 4:30 minute test with questions](#)
2. **Community building activity to feel anxiety, fear, hope & wonder:** You are yourself and arrive at a first community gathering. With everyone sitting in a circle, the host asks a series of personal questions and community members stand up if they agree, they remain seated if they disagree, and thus making visible what people identify with. Questions are personal and range from “I traveled from another country to be here” via “I enable others to do things” to “I have lost someone I loved” and “At times, I feel anxious about the world or the future.” At some point, the community itself gets to start asking each other questions. Participants have previously shared that they e.g. felt the anxiety, and didn’t want to admit it by standing up, but finally did.

3. **The Cooling Center:** You receive an extreme heat alert and have to report to the cooling center, a large space (like a gym or dojo) with moderate temperature. Inside, you are checked in and assigned a space to rest, while some people are pulled out of the crowd for a personal cool-down ritual. While nothing seems to happen in the cooling center, you witness a person making trouble/spreading themselves out, another one is visibly in distress and moans from pain. In the past, audience members started engaging to check on the person in pain.
Version 2: There is a drought, another patron is illegally hustling water for high prices. If you give them away when asked by the cooling center host, they get into a fight and will eventually get kicked out into the scorching heat (but you don't know this yet).
Version 3: You're joining a heat responder training and learn the "3 C's of heat aid: Check (pulse), cover (with an emergency blanket or pull in the shade), and cool (temples, neck, wrists, legs)
Version 4: Someone's looking for their cousin, but they cannot seem to find or reach them during this heatwave, they are in distress. Another patron starts telling a personal story of how they lost a dear friend.

This includes fun stuff like: Cooling center signage: The rules of the space, opening hours, some personal items (photo of person missing – "have you seen this person?")

4. **A body being carried away, wrapped in an emergency blanket** (image)
5. **The cooperative manifesto:** You are yourself and are with people of a similar background. You're supposed to set up a cooperative, a manifesto can serve as a guideline for discussion: How will you distribute ownership? Decision making? Share risks? Are you comfortable to talk openly about your personal (financial) situations? Participants can decide for or against a cooperative structure, or somewhere in between, and are prompted to envision alternative models of distributing wealth and power.
6. **Devising:** co-creating with others. Giving people prompts, such as: This is the scenario, create 3 one minute moments, these are the constraints. Give them one hour to work on it, check in, clean it up and co-create the situation for a playtest with an audience. Debrief with the audience, e.g. with these questions: What images or moments stuck with you?

What questions do you have for the creators? (This led to variations on the Cooling Center sketches)

7. **Premises (and structure):** The experience could be framed as:
 - a) a (half-real, half imaginary) conference - for those working on heat resilience and climate adaptation, imagination, and aligning stakeholders for better results
 - b) a (half-real, half imaginary) training for resilience workers
 - c) an emergency where people spend the night at a cooling center – the choice for one or another depends on the flexibility/variety of topics to cover and twist, the type of activities you want people to engage in (conference more talking, cooling center most ambient/being there/experiencing), and the way you want to tell the story and how you want action to develop. The conference lends itself to a debate with planted actors in the audience who disagree with the suggestions of organizers (climaxing in a tense discussion/fight/resolution); vs the cooling center could lead to some extreme resource distribution situation, etc.)

12 Extrapolated themes around resilience

Climate Migration	Climate emergencies have rendered homes of hundreds of million of people uninhabitable. By mid-century, 19% of the world could be in a barely livable hot zone, forcing up to 1.2 billion people into displacement.
Global North, Global South - and Global East?	The binary between the "wealthy North" and the "poor South" does not acknowledge the experiences of countries such as the middle East and even Eastern Europe, who have been suffering from European colonialism and experiencing discrimination due to a system of power relationships in Europe, but their experiences have rarely been validated. As we are expecting more migration, also within regions, we will have to acknowledge more diverse and implicit forms of racism and ethnical discrimination.
(Mental) health effects of multicrisis	Climate change is the single most harmful threat for mental and physical health of humans, animals, and ecosystems. By impacting health determinants such as clean air, safe drinking water, sufficient food and secure shelter, the climate crisis will cause approximately 250 000 additional deaths per year between 2030-2050 from malnutrition, malaria, diarrhoea and heat stress, as well as mental health stress.
Adaptation Financing	Public financing for adaptation is falling drastically behind as the need accelerates, costly disasters are putting ever more budget strains on public financing, and private markets for insurance are not structured to provide additional protection. Without pre-and post financing people become even more vulnerable to the increasingly severe impacts of climate.
Diverse Climate Movements	Climate movements grow more diverse and organize their structures in wildly different directions, including many fringe groups, out of which some apply techniques considered as violent, diminishing their support in the general public.
(The dark side of) Resilience	Resilience was supposed to align stakeholders with various interests, but it has become apolitical, and often framed top-down to preserve the past status, rather than co-created with communities to transform towards social justice. At the same time, resilience in a certain place and time will have trade-offs elsewhere. Instead of ignoring them, various stakeholders and communities will need to negotiate values in order to work towards "resilience"

War and Conflict	War is already on the frontlines in Europe, and increased coldness between China and the US is brewing. Countries are increasingly thinking about their own security, increasing financing towards national interests, and navigating an interconnected world in greater conflict. Hot conflict erupting would be devastating for health and climate ambitions that require international cooperation.
Dealing with multiple crises	As the probabilities for any climate impact increase, there's a greater risk of compounding crises that overlap and exponentially push the magnitudes, speed, and severity of our climate models and predictions - into truly unimaginable territory. We're not resilient against single climate impacts, let alone multiple ones exacerbated by war, pandemics, and other crises.
Idealism Burnout	People in climate action and care work face overwhelming negative outcomes. Mass burnout is a risk to a resilient workforce as even more action is required across a wide range of jobs and professions.
Mandatory Heat Adaptation	Policy at local, national and EU level factors in heat as a constraining factor ("Heat in all policies") to life, business, health, and leisure: Schools, hospitals and businesses hold regular heat trainings and during summer months, siesta is adopted by Northern countries. Urban development and new social services emerge around heat adaptation and efforts to prevent heat stress extend to nature, animals and local ecosystem health.
Polarization and Populism	Stagnating qualities of living, low optimism (fear?) in the future, fractured media landscapes, and social media fuelling more extreme outrage (and not deep listening to each other) - groups are being driven further apart with little incentive to work towards a shared future. This creates a fertile ground for malignant actors to not take climate action and makes it harder to collaborate.
Universal Basic Services and Post-Growth	In a post-growth economy, the needs of citizens in "developed" economies basic needs are met or (heavily) subsidized to ensure basic life quality standards, achieved through basic services, a basic income, a jobs guarantee, or a combination of these. To achieve that post-growth economy, certain industries will still develop (e.g. green growth) while others will need to be phased out (e.g. coal & other fossil fuels, but also advertising, etc.)

Climate Projections

	Habitable zones / land loss	temperatures	Rainfall & Droughts
1.5°C degree world	Human and animal habitats destroyed and made inhabitable by wildfire, flooding, heat. sea level rise by 2100: 48 cm	Europe: 47% chance of experiencing unprecedented summer heat each year.	Large parts of Europe affected by droughts (1-3 months annually) and extreme rainfall / flash floods (increase by 10-21%)
2°C degree world	Dramatic increase in area affected by wildfire in the Mediterranean. sea level rise by 2100: 56cm	Europe: 67% chance of experiencing unprecedented summer heat each year.	just a half degree of additional warming will double the increase in extreme rainfall. 2-6 months annual drought
3+°C degree world	Exponential increase of area destroyed by wildfires in the Mediterranean. Sea level rise cannot be determined, because feedback loops might cause pole ice caps to melt exponentially	additional hot days (annual): ranging from 2 days (Scandinavia) to 26 days (Iberian Peninsula)	4-12 months droughts in large parts of Europe.
Consequences for scenario world	Governments relocating coastal cities and those threatened by repeated wildfires at extraordinary expense. This will be the main reason for climate migration within Europe. These factors will lead to areas becoming unsafe to live in and housing shortages as refugees enter safer areas.	Heat waves and higher temperatures in general are an extreme public health threat that predominantly affect already disadvantaged communities. Community heat preparedness and networks in neighborhoods that help people during heatwaves will become critical to keeping death toll as low as possible.	Both drought and downpours can upend agriculture, displace people from their homes, and undermine local economies . Extreme rainfall, however, can unleash waterborne illnesses and cause people to drown, while droughts can fuel dust storms and forest fires. These factors will lead to areas becoming unsafe to live in and housing shortages as refugees enter safer areas.

	Food, crops, flora, agriculture	Planetary Health	Economy
1.5°C degree world	Growing seasons are prolonged, while yields for traditional crops drop. Heat stress for livestock and for crops, causing disruptions in supply. Favorable conditions for invasive plants and species, fungal diseases, and pests affecting agriculture	Increase in allergies, mosquito ranges and vector diseases in new areas, excess deaths due to heat, air pollution from fine-particulate matter, and mental health effects of repeated disasters. excess deaths due to heat 0.1-1% (Europe)	rising cost of insurance /rebuilding after disasters heatwaves cause performance losses, worker sickness, accidents and injuries at the workplace Climate change-related impairments to the transport of goods - overseas shipping, international air and rail. Low water levels on domestic waterways impair transport.
2°C degree world	N/A*	excess deaths due to heat 0.3-2.1% (Europe)	N/A*
3+°C degree world	N/A*	excess deaths due to heat 0.8-7.3% (Europe)	N/A*
Consequence for scenario world	Periods of hunger and rising food prices, and, eventually, a shift in what People eat (from wheat and maize to more soy, rice, as these are more resilient towards heat stress).	Emergency response and climate disaster preparedness in the healthcare sector becomes a critical component of climate-resilient communities. That means, workforce in these areas needs to be trained and prepared - and paid fair wages and treated better to not quit due to burnout.	Local self-sufficient structures and regional production and distribution will become crucial to food security and energy supply. Insurance and rebuilding costs will become insurmountable in affected areas, forcing more people to leave for economic and financial reasons as well as health & safety.

Key Scenario Elements

Written by Francesca Desmarais.

Based on work by Francesca Demarais, Juli Sikorska and Jelka Wickham

Resilience Workers In the Near Term (part 1, 2030ish)

Setting: The global temperature is now consistently over the 1.5C threshold. Climate impacts are an annual part of life, with each year bringing new extreme records in one (sometimes many) impacts. In Northern Europe there are 11 additional hot days, above 30C. And each year brings a 50/50 chance of experiencing unprecedented summer heat. More wildfires destroy human and animal habitats. Extreme rainfall events increase by 21% in Northern Europe, 18% in Central Europe. The Global South is facing even more dire impacts. Coastal flooding affects 28 million people a year globally.

Compounding Climate Impacts: Heat + Fire + Flash Flood

- Climate impacts, unfortunately, now come in multiples. One month there could be a heatwave that slows society and aggravates people's health conditions, the next a forest (or grassland fire) that pollutes the air with toxic particulates, and just when some cooling rain is called for...a flash flood physically destroys buildings and layers streets, cars, and the first floors of homes in thick mud.
- Resilience workers specialize in a response. Some are more physically able and can help people evacuate and clear debris after a fire or flood. Some enjoy the social connection and are able to check-in on elderly, chronically sick, and new parents during a heatwave. Some are natural networkers who build relationships with people across a community—they know exactly who to call for a spare generator, or an extra cook. Others have medical training and can make sure that basic health needs are met across a community. These workers are coordinated with emergency units and meteorological experts who can anticipate and then respond to climate events. Unfortunately, events are now frequent enough that being a resilience worker is a full-time job. You do get a bit of a break during the winter months to prepare.

Rehousing

- Some parts of the city, and some towns, are slowly becoming uninhabitable. Buildings built in the 1970s with little ventilation, poor insulation—they are too expensive to renovate – but during a heatwave they become roasting pots. Towns that suffer flash floods often have completely destroyed infrastructure, or molding housing units that are unsafe to live in. National and international climate migrants are also on-the-move, looking for safer areas than what was formally ‘home’.
- Resilience workers in the Rehousing sector help people find new, safer accommodation. They work with local governments to build and renovate buildings in more climate-safe neighborhoods. They work with local communities to welcome new people and build more cultural resilience—neighbors who share with each other in need, look after kids in a pinch, help move furniture, and check-in with you during a heatwave. It’s not an easy job. There’s never enough housing stock, and developers and landlords are always looking to make profit. Rehousing workers are actively trying to petition the EU for a right to safe housing—this shouldn’t be a commodity.

Universal Basic Income (UBI)

- With hotter summers, there are more ‘unproductive’ hours during the days, and many industries are generating less income—like ski tourism in the Alps, agriculture, and even railway systems that increasingly have melted tracks are seeing passengers choose other options. Overall economic growth is slowing, sometimes in brutal, jerking highs and lows. People are feeling more vulnerable—they are worried about their jobs not being there, and they have to dip more into savings during the bad times (especially after a heat event or a flash flood). There’s growing pressure for a basic level of support, a basic income across all of society. A redistribution of wealth from the richest, to all people. This ensures that people can meet basic, human needs from housing to healthcare to internet access.
- Resilience workers in the UBI sector make sure that people are receiving the income benefits. Some even advise people on how best to use their income, a bit of an accounting advice service. This is especially useful for people who aren’t used to budgeting. Some also protest the government and continue to ask for higher UBI payouts.

Compounding Events: Heat + Terror Attack

- Climate impacts aggravate other societal tensions. As people's livelihoods and basic health are increasingly threatened in the Global South there is growing frustration with the Global North. The Global North became wealthy by polluting and extracting, at the cost of communities outside their borders. And now they want to dictate what kind of energy systems the Global South can have. While some change is happening—change is slow. And the impacts aren't being felt fast enough for the communities on the front lines of the Global South who are threatened every day.
- Resilience workers in the anti-terror sector are preparing for the worst events that no one wants to think about. They bridge expertise between surveillance and counter-intelligence communities and heat health workers. They run drills and scenarios to be prepared. And when the threat alert is high—they're out in the streets, making sure vulnerable people have enough water and health supplies, cooling equipment. One of the scenarios they are currently planning for is an attack on the energy grid during a heatwave.

Resilience Beyond The Current View (Part 2, 2070ish)

Setting: We are now 4 decades in the future. Much work has been done to degrow and decarbonise the world (see below)--emissions are almost carbon neutral (what a global accomplishment!). But that action has come at a carbon cost. Turning a heavy ship still takes fuel. Temperatures are now +3C higher. Excess deaths due to heat cause 7% of deaths. The mediterranean suffers 37 additional tropical nights and +97% of its area burned from wildfires. People's lives and livelihoods are under threat in Southern Europe. The Global South is even more affected, but massive new infrastructure projects have raised their resilience.

Direction Degrowth: *Thanks to activists and the appointment of degrowth economists in the highest ranks of global economic systems (IMF, EU Central Bank, US Treasury Secretary) – pot-growth is more mainstream. It's pretty obvious that the same policies that unleashed prosperity and well-being in the 1900s are not fit for a world in an existential battle with climate change. Hard choices are made, and run away growth is not encouraged in most sectors of*

the economy. There's a growth cap of 2% for all industries – only decarbonisation industries are exempt. This isn't great news for everyone. There's an economic recession and it is nearly impossible to raise capital for big infrastructure or R&D projects.

Resilience is Community-Led Healthcare

- Over the four decades, the resilient health workers have become the top health experts in the new climate reality. They know their communities inside and out. They've shown how operating as more self-governed groups directly with communities can better health outcomes. Thanks to the 2% growth cap, traditional hospitals have become too expensive. Nurses and doctors quit and form their own community-led healthcare units. Inspired, and working directly with the resilient health workers.
- Nurses and doctors re-skill to learn self-organizing skills. They work in small units of 10-12 people, caring for a neighborhood. They have small clinics - easy to move if threatened by floods. They can connect remotely with experts when they need specialized advice. The state still runs a few large research hospitals that can take the most serious cases. But the healthcare units are much more present, much more connected to their communities - they are more successful and encourage good prevention, and during a heatwave or flood – they know how to reach people.

Resilience is Retraining for Degrowth Jobs

- The UBI allows people to live dignified lives working in social care jobs. And as the 2% growth tax means that many overconsumption jobs (retail, advertising, sales) are not as lucrative. People are able to find jobs that are deeply fulfilling, that connect on a deeper level with their humanity.
- Over the 4 decades people retrain to engage in jobs that are challenging, but fulfilling. Jobs that contribute to the society they want to emerge from the climate era. Detraining centers pop up everywhere – there's an abundance of opportunities! How do you want to spend your 24 hour work week? What hobbies do you want to enjoy on the side? You can get training in preventing new businesses, mending roads and

infrastructure, caretaking of plants and biodiversity, caregiving for children, teaching, caring for elderly, etc.

Direction Decarbonisation: *As more compounding climate impacts hit countries again and again, one thing becomes obvious. Emissions are a security threat. They destabilize local economies, and they increase conflict and international security. An EU 'War on Carbon' task force is created to decarbonise both the EU, and the rest of the world, as fast as possible. Speed is the only metric. Decarbonisation industries are exempt from the 2% growth cap (at least for now). It's solar baby solar.*

Resilience is Climate Safe Havens

- Over the four decades, there is targeted development on land that is considered 'more safe'. Higher ground, with strong communities. The 'War on Carbon' accelerates permits and construction to build out renewable energy (so these areas are self-sustaining), build more greenery (cool them down, draw down carbon), build fire breaks, sea level protection, etc., improve animal/plant diversity, and rehouse any people forced to move in the construction process.
- Developers make great money building out these 'Climate Safe Havens'. They become the places to live in, and absolutely the places to migrate to when a storm hits. They are much denser than other parts of the city. There's high tension between the communities who lived there originally - and the newcomers.
- The EU also funds more 'Climate Safe Havens' around the world. In some cases these are the only infrastructure left after an especially destructive flood/fire/hurricane.

Resilience is Rapid, War-like Decarbonisation

- Over the 4 decades, the EU 'War on Carbon' task force accelerated permits (transmission lines, wind farms, rare earth mineral mines, etc.), production of solar panels, wind and water turbines, R&D in new tech, energy efficiency, building retrofits, etc. Any roadblocks are smashed through. Any special interest groups are given opportunities to play a different role or have work suspended and legally be tried as an 'enemy of the future' – oil companies quickly get the message. It's really, really

lucrative to be in renewable energy anyway. Think the Marshall Plan, but on planetary steroids.

- The EU also dramatically increased its funding and technology transfer to the Global South. As has China. There's a 'green war' being waged to be market dominant, and yet domestically sufficient, in sectors of the decarbonised economy. Global South countries play both sides and gladly take the funding and technology—but in no way are they letting either country make decisions for them. They have come into their own power.
- In our European city...it's now fully running on renewable energy. People's habits have shifted, you run your dishwasher, clothes washer during the day when solar power is at its peak. On some winter nights you might only have enough electricity stored for a few hours of TV. Some people pay for the most expensive energy packets so they get priority (after hospitals, etc.) and can game late into the evening, or power a nightclub. Power is always a bit in flux, mostly stable...not always. Cars are all electric...but they're still expensive. Much cheaper and easier to use an electric bike, or hop on the widely available public transport.
- Some co-ops are operating as reporting organizations—they track emissions reductions and can measure how close co-ops, companies, and governments are to carbon neutrality. There's a growing sense of excitement that globally we are nearing peak carbon! This is fantastic news...but the mood is always tempered by looming tipping points. Scientists continue to write doomsday reports about the melting ice barriers and slowing AMOC circulation. Instead of counting carbon, some reporting organizations are now specializing in monitoring sea level and making countdown clocks until sea levels rise by 10 meters.

Event Program

	DAY 1 – Immersion	DAY 2 – Sense Making	
SATURDAY Immersion & care 15h Welcome & arrivals 16-19h Immersion 19-20h Aftercare & Debrief Dinner	OPENING 1. Arrivals + Who is who 2. Community building 3. Agenda Overview 4. Ground Rules & Safety IMMERSION 5. Entering The World (Time Jump 1 / Narration / Exposition) 6. Looking into the world: Resilience Workers’ Memories 7. Situation 1: Resilience Recruitment Fair 8. (Time Jump 2 / Narration / Exposition) 9. Looking into the world: Community Members’ Banter 10. 11. Situation 2: 12. Safe Haven Community Council Meeting 13. Leaving the world (Time Jump 3 / Narration / Closing) RETURN 14. Debrief 15. Dinner	1. Coffee & Croissants SENSE MAKING 2. Sense Making: Metaphors a. Decarbonization Marathon b. Safe Havens c. Balancing Abundance CLOSING 3. Community closing + open floor 4. Community Lunch	SUNDAY Reflection & action 9h Breakfast 10-12h Sensemaking 12h+ Potluck lunch in the garden

Sense-Making: Debrief

Emotions people felt: Confusion, Struggle, Sadness, Guilt, Frustration, Fear, Excitement, Curiosity, Joy, Relief, Comfort, Wonder, Hope & Lightness, Happiness. Power

Desirable scenario aspects

- Mindset-shift: Abundance instead of scarcity, sharing practices
- Decision-Making: the council situation, consent-based decision-making
- Collaboration: everyone aspires to be part of the solutions
- Mental Outlook: Feeling of self-efficacy, and self-organized mutual aid and solidarity, Resilience jobs provide more meaning than “bullshit jobs”
- Community: Feeling safe within, kindness

How to reach them

- COMMUNITY (SAFER) SPACES: Start now to create safe(r) spaces, where lessons and ideas are shared broadly. Need for spaces that show an alternate way, opportunity to feel and experience it
- CREATE URGENCY & SPUR ACTION: Generate sense for emergency in general public; Use media/communication to show positive visions; Pay resilience work. Make care/volunteer work even more visible

Undesirable scenario aspects

- Distrust for authority on part of the resilience workers and the self-administration of safe haven
- Binary created by safe haven: push towards „othering“ practices
- Rehousing (giving something up doesn’t always feel good)
- Abundance surprisingly evokes resistance (too theoretical concept if there’s much more concrete help needed with emergency work and housing)

How to avoid them

- BIPARTISAN POLICY-MAKING: Create a “grey space” to enable collaboration with political opposition; Abolish perfectionism in political field, allow for experiments and failures
- HOUSING: Address the present housing crisis as the core of resilient urban futures: Airbnb-ification, unused space, inequality, climate justice in housing
- CARE: Prevent burnout among climate practitioners; Create and establish practices of self-care; Demand and support engagement, not just reactivity from people in community - make sure they feel heard and feel self-efficacy

Sense-Making: Metaphors

Guiding questions:

- What are the values behind this metaphor? What does it stand for? What's the essence that helps it achieve transformative adaptation?
- We experienced one way of it manifesting. What are other ways you could imagine these values manifesting? Maybe in unconventional ways?
- Who could be unlikely allies to help advance these ideas?

Decarbonization Marathon	Safe Haven	Balancing Abundance
Value / Meaning: • long-term thinking, hardship, conserve resources, commitment, and duty • It is a long stretch to run/hike/power walk, and opponents of the idea put up hurdles • Requirements: Endurance, training, routines, cheerleading crowds and supporters • burnout is imminent Manifestations: • creative lawsuits, climate lawsuits • individual consumption pledges: "Everything you buy is a vote" or "You are the traffic" (Unlikely) Allies: • The system itself: struggle on the terrain of the state (lawsuits for carbon neutrality) • FFF, children, spectators -> cheerleaders	Value / Meaning: • Trust • Safe as I am safe here; safe as wealthy • Safe does not mean it is safe for everyone; it creates a binary and fosters a "us v. them" mentality Manifestations: • Allow for permeability (image: a hand extending to the outside, and hands from the outside reaching in) • Common decision-making and co-creation to foster trust, give people tools for self-organization • Resilience network can help create trust • Civic councils (DE/FR) (Unlikely) Allies: • Disaster as ally • Neighbors	Value / Meaning: • Belonging, sharing, letting go, love, trust, identity, openness Manifestations: • Starts with critical exploration of (material) desires and consumption - "appreciating where you are NOW" • Mindset shift: From "Is there really enough for everyone?" to "it's there, just unequally distributed", • sufficiency replacing the pyramid of needs • reframing: abundancing balance (because bundance doesn't necessarily need to be balanced, it can be shared) • Ex. of places where resources are shared, not owned: Library, public parks. Citizens deliberately choose to share/borrow instead of own

Policy recommendations for policy makers on how to work with experiential climate futures²⁴

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Dealing with multiple crises is complex and full of uncertainty. The climate crisis requires rapid decarbonization, adaptation, and long-term systemic transitions to build climate resilient communities, prepare for impacts that often extend years or decades into the future, and advance social justice. This poses challenges for decision-makers in federal and local politics: Not only do they have to work evidence-based, but also be able to explore a variety of alternative scenarios, assumptions about futures, and understand how it could feel to live in them, which is a domain of creativity and imagination. Despite evidence on how creative practices can support sustainability transitions (CreaTures 2023), there is not enough room for them in the political arena, and so many climate concepts have failed to deliver on their transformative promise.

Scientists and creatives alike have pointed out how hard it is to grasp the complexity of the climate crisis (Ghosh, 2018), the need to facilitate emotional over intellectual engagement for such complex issues through immersion (Jain et al., 2019) and have suggested using experiential futures to advance policy (Candy, 2010) to design for transitions (Lockton & Candy, 2019). Immersions make future scenarios tangible and open up a participatory arena for creating new and richer scenarios. They also allow to put up ideas for discussion that sometimes seem wildly preposterous from today's perspective.

The design research project (HeatCon 2023) dedicated to experiential futures practices in climate adaptation policy, conducted by Urban Heat Studio, resulted in the following recommendations for policy makers.

²⁴ Also see Urban Heat Studio et al., 2023, available online https://creativeimpact.eu/wp-content/uploads/urban-heat-studio_final-report_public-version.pdf

1. Embrace transformative practices to climate mitigation and adaptation

Adopt systemic change, innovation, long-term perspectives, participation and inclusivity, learning and flexibility, and multidisciplinary approaches to climate mitigation and adaptation policy. As conventional ways of mitigating the climate crisis have been insufficient, transformative mitigation (and adaptation) approaches (Pelling et al., 2015) go beyond this and involve fundamental and dynamic changes in systems, structures, mindsets and behaviors. Experiential climate scenarios can help envision and embody alternatives and facilitate these shifts. More specifically, consider the interconnectedness of ecological, social, economical, political and infrastructural issues and their compounding impacts in concepts and policies, imagine desirable visions of the future, and bring them to life through experiential scenarios.

Policy makers should propose opportunities derived from longer-term future scenarios and multidisciplinary approaches that are typically overlooked, which can include e.g. community-led responses to climate emergencies, large scale migration, transitioning economic systems and accelerating decarbonization. Instead of designing by disaster, decision makers can choose a more proactive, participatory, more sustainable and intentional approach to building resilient futures for their communities.

2. Encourage transfer of insights and methods from the cultural and creative industries into climate policy

Encourage a transfer of creative methods and insights to the development of climate protection and adaptation measures, and projects in the cultural and creative industry should be allowed to venture further into designing solutions for the climate space. Establishing a permeable relationship between climate and culture is especially relevant, because designing experiences and surfacing emotions – a key component of creative practices – bring a valuable, subjective level of understanding of an issue. This can support political decision-makers in developing more nuanced scenarios and visions of the future, and making better informed decisions. Further, the participatory context of immersive scenarios can be used to strengthen the involvement of civil society, administration, business, and local creatives.

3. Use experiential scenarios in political decision-making and administration to explore other alternatives and make better informed choices

Include experiential futuring in (climate) policy processes at an early stage. Creatives can and should be invited to co-create scenarios, explore new possibilities and facilitate better informed decision making, rather than merely doing science communication. This has been successfully applied in e.g. the experiential futures “Hawaii 2050” by the Hawaii state legislature (Candy et al., 2006). Experiential scenarios can further be utilized internally as training opportunities for administrative staff and political decision-makers to practice response mechanisms, for strategy development, or to carry out participatory engagement formats with external stakeholders. Engaging employees of public organizations in these practices can help foster a co-creative atmosphere and it could engage them in shaping responses and processes. Given the right conditions, stepping into an alternative future can allow them to disconnect from present-day hierarchical or interpersonal barriers, which often stall transformative ideas in governance.

4. Make funds for experiential futures practices available to advance anticipation and systems transformations

Allocate funds for experiential futures practices across a wide range of funding schemes and budgetary planning, from individual municipalities to larger networks of organizations, ministries, and cultural institutions, especially as many municipalities have budgetary constraints that make it hard for them to apply creative methods. Funding transformative practices cannot be evaluated with conventional tools or based on direct carbon emissions prevention alone, hence embrace transformative evaluation approaches (Vervoort 2023). Therefore, funding programs in the climate sector should focus on removing barriers, allow for flexibility that the creative process needs, and encourage transformative processes applied with funding.

5. Create and maintain experiential futures staff positions in the administration to strengthen long term transformative mindsets

Create positions for experiential futures and related creative practices, following examples of the Design Fiction Manager at the City of Grenoble, France, and embedded artists in Scotland (Creative Carbon Scotland, n.d.). Their creative

potential should be used in the policy making process, rather than embellishing a conventionally derived policy or measure. By doing so, the technical efforts in climate mitigation and adaptation can be complemented with richer scenarios and responses to more complex, interconnected issues. Though visiting creatives can be a start, hired staff members can better align the city's projects and processes and build long-term imagination and anticipation capacity. Consulting over a long term process, they can use scenarios to inform concrete policies. To avoid isolation, facilitate exchange and sharing good practices between these staff positions.

These recommendations emerged from a design research project on transformative governance in climate adaptation, HeatCon 2023 (July - November 2023). HeatCon 2023 was dedicated to the question of how experiential climate scenarios advance transformative governance in the climate policy space. The project was carried out by Urban Heat Studio and funded by the Creative Impact Research Center Europe. These recommendations reflect the outcome of the project and were written by the Urban Heat Studio team. They don't reflect the opinions of the funder and its team.

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It is my intention to use gender-sensitive and anti-discriminatory language, especially in German, in order to underline the explicit linguistic representation of social genders and gender identities beyond the hegemonic binary conception of gender.

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