



CREATURES



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 870759. The content presented in this document represents the views of the authors, and the European Commission has no liability in respect of the content.

CREATURES DELIVERABLE

D2.4 Review report of transformational strategies v3

Grant Agreement number	870759
Action Acronym	CreaTures
Action Title	Creative Practices for Transformational Futures
Funding Scheme	H2020 Societal Challenges: Inclusive, innovative and reflective societies
Version date of the Annex I against which the assessment will be made	January 15, 2021
Start date of the project	January 1, 2020
Due date of the deliverable	April 30, 2022
Actual date of submission	May 31, 2022
Lead beneficiary for the deliverable	University of Sussex
Dissemination level of the deliverable	Public

ACTION COORDINATOR'S SCIENTIFIC REPRESENTATIVE

Prof. Tuuli Mattelmäki

AALTO-KORKEAKOULUSÄÄTIÖ,

Aalto University School of Arts, Design and Architecture: Department of Design

tuuli.mattelmaki@aalto.fi

Authors in alphabetical order		
Name	Beneficiary	E-mail
Lara Houston	University of Sussex	L.houston@sussex.ac.uk
Ann Light	University of Sussex	Ann.light@sussex.ac.uk

Abstract
This report provides an overview of our approach to researching selected examples of transformative creative practice and the building of the Observatory repository of transformational cases. It is the third report in a series of three.

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Section 1: Introduction

Rationale of the CreaTures project

The rationale for the CreaTures project is that transformations towards more sustainable ways of life are urgently required. Human societies now face interlinked sustainability challenges – most urgently climate breakdown and biodiversity loss. In order to curb the worst excesses of these impacts on our shared planet, we need to move away from ways of life that are ecologically and socially unsustainable, towards systems that are more sustainable by design. Intergovernmental bodies such as the International Panel Climate Change (IPCC) continue to highlight the urgency of these changes (e.g. IPCC, 2022) in particular the urgent need to reduce, and ultimately discontinue the use of fossil fuels, and in the case of biodiversity, the Intergovernmental Platform on Biodiversity and Ecosystems Services (IPBES) highlights the need to take action to conserve biodiversity (Díaz et al. 2015). Averting collapse is a shared responsibility – and creative practitioners are working to reduce their carbon emissions and to raise awareness of the climate emergency; for example, the UK-based group [Julie's Bicycle](#)¹ helps creative practitioners to monitor and reduce their carbon emissions, and [Culture Declares Emergency](#)² (discussed in more detail in D2.2) is a group that has been created by creative and cultural workers to acknowledge climate breakdown and to work collectively on awareness-raising and other activities.

However, many creative practitioners are also making creative works about sustainability challenges, including climate change and biodiversity loss. They are using their work as a space to explore our contemporary conditions, and to develop new forms of practice to promote more sustainable ways of life – i.e. those that are not socially and environmentally destructive and extractive, that bring earth systems into view; becoming part of human meaning-making in new ways. It is these practices that the CreaTures project focusses on (and indeed, the CreaTures project is co-constituted by a group of creative practitioners with these interests, alongside researchers from social science, design, and sustainability science). These practitioners – engaged in what we call *transformative creative practice* – use their creative skills to help a variety of groups (such as audiences, participants, colleagues and collaborators, sectoral networks) to develop new forms of practice that can seed or manage change ‘eco-social’ change (a term that we use to signal an interlinked concern for ecological and social relations that can lead to change in cultures). These projects scaffold people’s imaginations, provide equitable spaces for exploration and build new networks and capacities.

A central concern of our project is to understand the potential impacts of creative work that aims to question current everyday practices and create experiences for people of alternative futures. As D2.3 discusses, the sustainability transformations community have already begun to explore the work of creative practice (e.g. Hajer and Pelzer, 2018; Hajer and Versteeg, 2019; Maggs and Robinson, 2020; Bendor et al. 2017; Strippel et al., 2021). We aim to contribute to these discussions, as well as support specific domains of creative practice that are interested in sustainability-related themes.

Project structure

A brief orientation note on the structure of the project is helpful in understanding how this Deliverable connects to other strands of work within the project. For more detailed description of the interdisciplinary aspects of the project, please refer to Deliverable D2.3.

At the centre of the project is the Laboratory (Work Package 3), where creative partners produce new works (known in the project as Experimental Productions, or ExPs). These

engage publics and stakeholders in sustainability-related experiences at selected locations across Europe. ExPs have included gallery exhibitions, participatory games, participatory performances, courses, and a wide range of other events (see Deliverable 3.7 for a complete list).

Deliverable 2.4 is led by the Observatory (Work Package 2). We take a wider-scale look across the realm of creative practice – identifying key trends within the ExP group but also beyond that into a selection of creative fields. We are guided by the following objective:

- **To identify and map existing, new and emerging initiatives that aim to produce transformational action through creative practices.**

We agreed to meet this objective by:

- Working within our multidisciplinary consortium and extended networks to locate a variety of initiatives that are already focusing their work on the area of social and ecological sustainability.
- Conducting systematic mapping, connecting, and analysis of their purpose, how they operate, with whom/how/where they work, their conceptual and practical approaches to creative practice, and how they currently understand and evaluate the social and ecological impacts of their work.
- Presenting the findings of this work on an evolving website that functions as both a repository and a hub, named the CreaTures Repository.

This Deliverable is the final report on our progress in these tasks, prior to the publication of the Open Creative Practice Framework in September 2022. The diagram below shows how the Observatory is oriented – the Observatory hexagon connects to other work that ‘is going on already’ in the world. It explores ‘existing practices and projects’ beyond CreaTures. As shown, the Observatory also connects to the Laboratory ExPs, which forms a second core data source for the Observatory’s review processes.

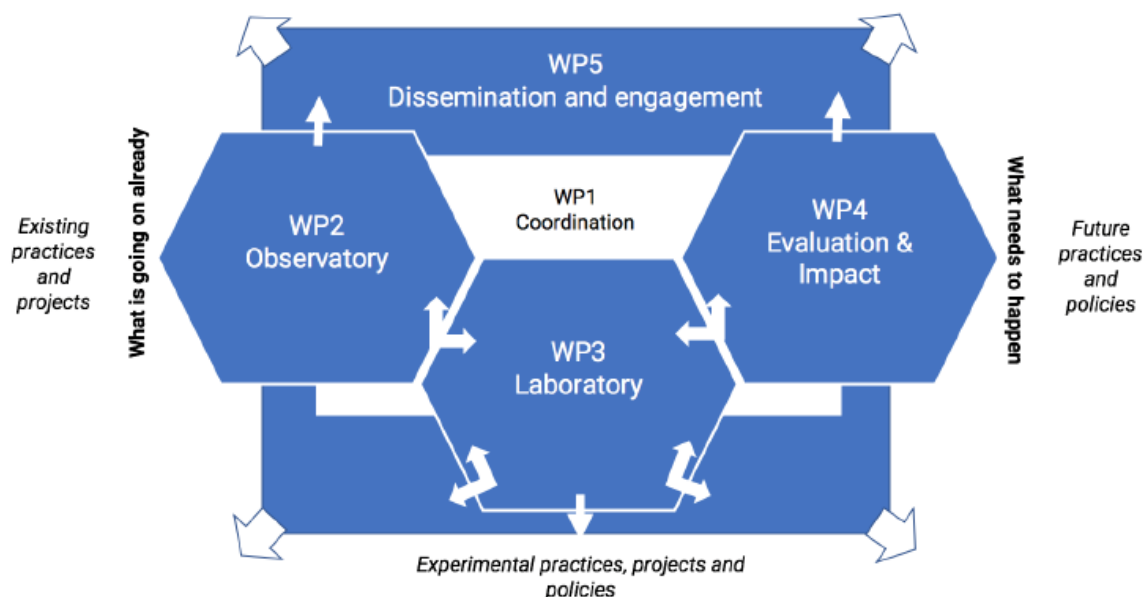


Figure 1: The CreaTures relationship between components

The Evaluation work (Work Package 4) creates new tools for understanding how to evaluate the contribution that creative practices make towards sustainable transformation. This

includes practitioners' own learning and reflection practices, as well as more formal modes of evaluation undertaken in order to interface with funders and other 'governing actors' (for example, policy makers). The Engagement work (Work Package 5) is done with all the other partners to engage stakeholders, and to ensure that the project's research is disseminated widely, paying particular attention to issues of inclusion.

Cumulative progress so far

This is the third report in a series of three reports that build on each other. The first two reports are summarised here:

D2.2 Review report of transformational strategies v1, finalised August 2020

Since the COVID-19 pandemic halted many forms of creative production in March 2020, this report contained a rapid-review of how members of Culture Declares Emergency were faring in the immediate crisis of the COVID-19 pandemic. (Culture Declares Emergency are a self-selecting collective of arts and cultural organisations that have declared a climate emergency, which we chose to use as a core focus of analysis). We understood the pandemic as a form of enforced societal transformation, and therefore used this opportunity to snapshot what was happening in creative organisations. We found that they were:

- grieving their immediate programmes of work, and any sense of a stable future in the short-to-medium term horizon;
- caring for their peers, particularly those in more precarious situations - by stepping up to offer a wide range of peer support;
- sharing their back catalogues online, to entertain audiences in a frightening world; creating a new media landscape of online creative work;
- connecting to isolated audiences using digital tools to foster new connections and provide emotional and practical resources; and
- co-creating with audiences to produce new creative works, some of which document these unprecedented times.

This Deliverable also outlined our planned approach to identifying transformative strategies by collecting a corpus of 'transformative' projects nominated by a range of practitioners and interested others. The second Deliverable in the series provides an update on the first stage of that work.

D2.3 Review report of transformational strategies v2, finalised August 2021

This report gathers definitions of *transformative creative practice* (Light et al. 2018) from across the range of disciplines represented in the CreaTures consortium, as follows:

- A review of key concepts from the sustainability transformations literature, including definitions of sustainability transformation and significant mechanisms for change (relating to imagination, anticipation and aesthetics).
- Interview analysis with the consortium members, representing definitions of transformative creative practice from inside a group formed around that concept.
- Insights from three ExPs on how change is catalysed through strategies for dissemination that approach scaling through the building of relational networks that respond to local, situated conditions (over prominent visions of 'scaling up').

Taken together, insights from the literature and ExPs analysis revealed that creative practitioners make work on *topics* related to sustainability, work on social and environmental *conditions* and produce specific *effects*.

At this stage, to fulfil the mapping aspect of WP2 objective, we began to gather example cases of transformative creative practice, using the interviews conducted with consortium members and literature searches conducted as part of the sustainability transformations literature review. In 2.3 we provide a more comprehensive outline of our planned approach. In order to plan the CreaTures web repository (where the strategies and examples will be held) we also conducted a review of existing online repositories.

What is covered in this Deliverable (D2.4)

Building on all the materials generated in the previous two Observatory Deliverables, and an analysis of the nominated cases, this Deliverable presents a set of transformative strategies that creative practitioners use to seed and to direct change processes. It contains the following components:

- An analysis of the case corpus that has been collected throughout the project
- An extended case study of an ExP
- Based on these analyses, a set of transformational strategies that are used by creative practitioners to set the conditions for transformative change.

Section 2: What is transformation?

As the previous Deliverable D2.3 revealed, the term *transformation* carries different meanings for the partners within the consortium. Here, we briefly revisit the meanings of transformations that we are working with in this Deliverable.

Creative practitioners: transformation as change

Our interviews with 14 CreaTures members (detailed in D2.3) found that those working within creative organisations used the term ‘transformation’ as a synonym for change. Transformation was not necessarily a term that they used in relation to their own practice (not least because it is difficult to translate into different languages, as discussed in the CreaTures Glossary, explored in the upcoming Deliverable D2.8). Creative practitioners were centrally focussed on *changing relations* (for example between people, or between people and ecosystems). In the interviews (as detailed more fully in D2.3), practitioners described emergent worlds-in-the-making and situated their work as skilfully connecting and nurturing sets of dynamic and unfolding relations therein.

This focus on relations corresponds with a relational ‘turn’ in the humanities and social sciences more generally, which has enabled more complex understandings of the interactions of entities, beyond binary structures of thought – perhaps most notably for the CreaTures project, taking account of the agency of non-human entities and troubling the ‘nature-culture’ binary that has for so long existed in Global Northern thought. In particular, the key idea of *ontological difference*, set out more fully in D2.3, remains central to our analysis here. In brief, we define ontology as a shared assumption about the character of the world (Law 2004). Rather than a single ‘one-world world’ that centres Euro-American ontology (Law 2015), we remain open and alert to how different (or multiple) ontologies emerge in our discussions of change processes, noting particularly where these relate to post-colonial and Indigenous perspectives. These perspectives – which have been systematically othered or excluded (Barad 2007; Escobar 2018; Law 2015) – are increasingly being understood in their fullness as a wellspring for new patterns of relating, for example in transition design (Escobar 2018). This relational perspective is increasingly being explored in sustainability transformations literature, for example in West et al.’s paper arguing for a relational turn in sustainability science (West et al. 2020).

In our interviews, creative practitioners highlighted broad sets of relations that they felt were central to discussions of transformative change towards more sustainable futures including:

- relations of participation – for example working skilfully with power dynamics in creative settings
- systems or infrastructures – for example, building networks inside and outside of the creative sphere, such as contributing to legal processes
- practitioner subjectivities – for example, cultivating a radical openness to being personally changed in settings of high trust and care
- societies – for example, by exploring the interface of what currently exists and what is possible.

In this Deliverable, we build on these initial observations on relational interconnection, by exploring more deeply how exactly creative practitioners work within and across these broad sets of relations.

In addition, in these interviews, practitioners also focussed on multi-year strands of work, personal ‘missions’ and career trajectories rather than discrete projects. Time is an important dimension of transformation in sustainability science, and, we argue, it is overlooked in creative practice, which tends to focus on discrete finite projects (fuelled by the nature of

much funding policy) or moments in time (such as single experiences). In our case studies, we explore how longer timelines (rather than the lifespan of a single project or event) could become an important temporal horizon in practitioner definitions of transformation, particularly where these are being brought alongside sustainability science definitions.

Transformation in sustainability transformations scholarship

Sustainability scholars note that transformation ‘appears increasingly attractive to articulate aspirations for significant and enduring change in human society towards more sustainable and equitable global futures’ which ‘reflects enthusiasm within global sustainability discourse for moving from ‘describing problems’ to ‘identifying solutions’, and for better understanding possible pathways of sustainable environmental and societal change within the looming Anthropocene’ (Patterson et al. 2017, 2). This community is interested in locating effective processes of societal change in any domain – since learning about how change happens can provide helpful practice-based knowledge for seeding or steering deliberate transformations towards sustainability. Creative practice is of interest to transformations researchers as a significant vector of societal change (and one that is understudied, compared, for example, to technology) (Bentz, O’Brien, and Scoville-Simonds 2022).

In D2.3, we conducted a review of the relevant sustainability transformations literature on creative practice. In it, we established that the transformation community is coalescing around a disciplinary definition of sustainability transformations, as multi-year processes where systems make a defined change from one state to another (Feola 2015). This is a more technical definition than creative practitioners’ understandings of transformation. Feola identifies two types of research within the sustainability transformation literature: descriptive-analytical research, which investigates existing change processes without defining a normative end point, and solution-oriented research, which works towards specific pathways and outcomes (Feola 2015, 384). Research on creative practice tends to be of the descriptive-analytic type, intended to ‘describe and understand the complexity of human-environment interactions, and thus provide the knowledge that would ultimately translate into practical solutions’ (Feola 2015, 384).

As CreaTures is an interdisciplinary project with diverse understandings of transformation among its researchers and practitioners, in this Deliverable, we attend to both these meanings of transformation, using Feola’s analysis as supportive of some distinctions to be made. While our focus is primarily on practitioners’ sophisticated understandings of transformative change processes, we also highlight connection points to key concepts within sustainability transformations literature, particularly that which deals with creative practice.

How do we produce knowledge about transformation?

Where D2.3 focussed on gathering together different understandings of transformation, this Deliverable concentrates on sharing knowledge about *how* creative practitioners start and manage change processes, using the concept of ‘transformative strategies’.

The current scholarship on sustainability transformations contains a range of rich and diverse approaches to conceptualising change (see Patterson et al. 2017 for a summary overview). This literature often draws on case studies of transformation processes; drawing from these to create frameworks and other heuristics that visualise large-scale, interconnected dynamics of change for the purposes of steering transformations. Creative practices tend to be included as and when they connect to a socio-technical system transformation; for example, in Geels’ Multi-Level Perspective of socio-technical transitions,

creative practice might spur niche innovations, or form part of the ‘culture’ strands of the existing socio-technical regime (Geels 2011). Other approaches focus more on socially-oriented processes: for example the sustainability pathways approach, ‘is sensitive to the fundamentally political and intersubjective nature of sustainability problems’ (Patterson et al. 2017, 6) and therefore leaves space for the social dynamics of transformation to emerge.

The Evaluation team in Work Package 4 of the CreaTures project has taken a systems perspective on evaluation, thinking through how creative practices connect to Donella Meadows’ leverage points (Meadows, n.d.), and developing new indicators for understanding how creative practices can contribute to sustainability transformation (see Deliverable 4.2). To act as complement to their work, in this Deliverable, we begin, not with systems, but with practice, and thus centre this document on creative practices.

Our approach follows other scholars in creative practice and sustainability transformations who have gathered cases into collections and used these as the basis for comparative analysis of practice – creating practice-based outcomes for use by other practitioners, but also indicative signals that might shed light on how creative practice features in sustainability transformations. An example of descriptive-analytic work of this nature would be Galafassi et al.’s study, which brought together a corpus of 199 climate artworks and 102 climate art projects using interviews and Internet searches, analysing project descriptions in order to understand the how creators framed their projects’ goals and contributions (noting that goals may only be loosely defined). Rather than proposing a framework, their review offers ‘insight on the range of orientations that drive climate art engagements’ (Galafassi et al. 2018, 74).

In solution-oriented research, we find a similar desire for insights and analysis by corpus. Pelzer and Versteeg, for example, argue that ‘[a]rt and design can be helpful in opening up... debate and imagining alternative futures...[h]owever, not much is known about how such interventions work’ (Pelzer and Versteeg 2019, 12). We read this as a clear call for practice-level knowledge. Their study reports on a creative competition dedicated to imagining the Post-Fossil City, which culminated in a public exhibition. Afterwards, the authors analysed the finalists’ submissions, in order to identify what they call a set of ‘imaginative logics’. These are defined as ‘the set of principles underlying or constituting an imaginative intervention, by means of which an abstract phenomenon is made present to an audience’ (Pelzer and Versteeg 2019, 12). The logics were: doable, juxtaposing, defamiliarizing, guerrilla and procedural. Pelzer and Versteeg argue that this ‘typology can be a starting point for further research into how and when to apply what kind of futuring intervention’ (Pelzer and Versteeg 2019, 12). We build upon their call for more research into practice and others’ work to present our study of transformative strategies used by creative practitioners.

How do we define sustainability?

Building on our literature review, we argued in D2.3 that creative practice has a distinctive set of priorities in the broad area of sustainability. We call this approach ‘eco-social’ for the purposes of the CreaTures project, in order to distinguish it from definitions with a more material focus, for example on the limiting of resource use. Our approach is pluralistic – we recognise the urgent need to limit resource use but also the need to live well together on the damaged planet that we have now. The social emphasis can be traced to socially engaged traditions in art, design and social change.

Eco-social sustainability, then, is guided by scientific inputs, but does not reduce sustainability to the application of expert derived targets or recommendations for resource management. It understands choices in resource management to emanate from cultural

orientations that conserve or consume, care or exploit, all of which have both a local and global manifestation. What sustainability is and means must, therefore, be open to co-creation in specific places, with the involvement of diverse groups of people (Maggs and Robinson 2020). This requires prioritising participation and inclusion across difference. Eco-social sustainability connects to issues of social justice between humans (Kagan and Kirchberg 2008) – for example race, sex, gender and class – but also increasingly across species.

Eco-social sustainability is interested in understanding not only different traditions of knowledge production, but also to foundationally different ontologies. Creative practitioners are alert to the failure of canonical categories (e.g. 'nature' and 'culture' and the relations between them) and, indeed, provide an engine for new ontological and epistemological forms (Escobar 2018).

In consortium workshops, we came up with several of our own definitions:

“Eco-social is a recognition that there is no ecological without the social because it is the massing of human intention and change that has affected the ecological more profoundly than anything else.” – Ann Light

“Eco social sustainability means a way of living that is just, and does not privilege any person or group of people at the expense of other people, other beings or the planet, and that is multi-generational, multi scalar, relational, and pluralistic. Eco social change means systemic change that needs to happen to lead to a more eco-socially sustainable world.” – Joost Vervoort

“It brings into focus ideas of interdependence, justice, multiple agencies, getting hands dirty and doing things aesthetically (not only as in beautifully but as in attending to details and composition; feelings and relations).” – Andrea Botero

This approach is similar to those emerging in many sustainability fields, as new concepts such as the Anthropocene provoke more radical questions about our place in the world, and new forms of complex systems thinking similarly dissolve binaries between 'environmental' and 'social' realms. For example, Frank Biermann writes about the failure of the 'environmental policy' paradigm under the new framing of the Anthropocene, explaining that it 'emphasizes a dichotomy of 'humans' and 'nature' that is no longer defensible... deemphasizes questions of planetary justice and democracy... and may risk political marginalization of central concerns of human and non-human survival' (Biermann 2021, 61). Kate Raworth's doughnut economics provides another example where social considerations are central to visions of sustainable transformation (Raworth 2017).

Section 3: Our approach to gathering data

In the Observatory (WP2), we have gathered a case corpus across the lifetime of the project, using four different processes (described more fully below) to produce iterative insights about transformative creative practice. We recognise that research methods ‘not only describe but help to produce the reality that they understand’ (Law 2004, 4), meaning that gathering and analysing a case corpus is a constructive act. Where other projects have gathered cases on specific topics (for example, climate change post-fossil futures), we have recognized a need to work differently in assembling cases (as described in Deliverable D2.2). In line with our interdisciplinary approach to practice and recognising the relational in this work, we chose to focus on *processes* (rather than topics), with the additional benefit that topics would not be pre-specified in advance, but would emerge from the analysis to inform on sustainability.

This allowed us to focus on *what* a range of creative practitioners were doing towards the development of more sustainable futures, without prejudging the arenas in which they were attempting change. In this sense, we stay true to the relational focus of the project, taking known instances of transformative creative practice and connecting outwards using a snowball sampling method. We note this approach has limitations, and therefore we are not claiming this as representative of an area, but rather as deep, practice-focussed knowledge from eco-socially engaged practitioners in an area that is yet to be defined. In an exploration of process, this focus on relations and techniques allows us to map out a design space of diverse strategies, rather than produce an exhaustive study of what is an evolving and under-defined field, for which there is not yet a consistent sense of constituency. By focusing on transformative creative practice as a process with effective strategies (and also experiments and failures, exploratory forays and dead ends), we reveal the research that creative practitioners undertake to evolve these strategies and how they design their artistic interventions to particular ends. We also shine a spotlight on a cluster of activities that will be increasingly important as transformation becomes more urgent, thereby contributing to the development of this field and its definition.

In previous Deliverables (2.2 and 2.3), we explained how this corpus of cases was drawn together. Here we add a final update. Our corpus of cases includes:

1. The CreaTures ExPs (20 cases)

Our project has commissioned new works (Experimental Productions, or ExPs) from a range of creative practitioners, all of which has been studied by at least one CreaTures researcher to produce detailed case studies. This has generated a collection of in-depth data about these specific projects ranging from producer intention to user experience, including participatory workshops, interviews, participant observation, reflective diaries, and surveys, comprising over 100 pieces of data. In addition, we have gathered photography and videography of the works (both in progress and completed).

3. Literature Reviews (20 cases)

In addition to the CreaTures consortium focus, we analysed cases within the sustainability transformations research community, located through our literature review (detailed in D2.3).



Figure 3: Cases located within reviews of the sustainability transformations literature

4. Governing actor interviews (8 cases)

We also collected cases that had been mentioned in interviews and engagement events with governing actors (such as policy makers in creative practice and sustainability, funding organisations and knowledge brokering organisations) in Scotland, the Netherlands, Finland and beyond (such as the Carasso Foundation in Spain/France).

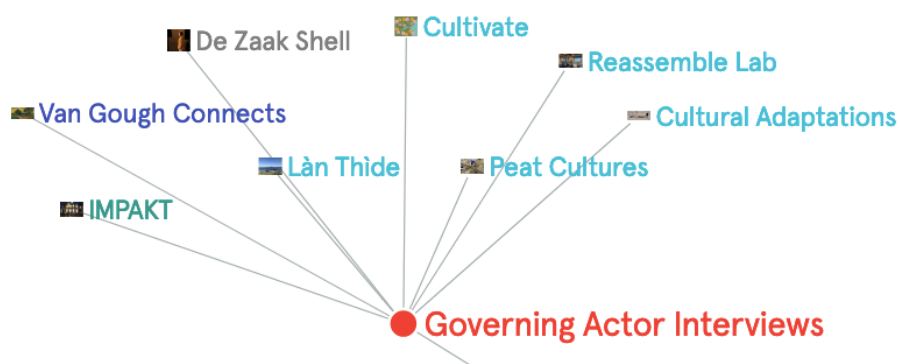


Figure 4: Cases from governing actor interviews

The GraphCommons interactive network of cases shown in the figures above can be accessed [here](#)³.

Creative sectors and parts of the world

We used EU sector specific reports and taxonomies to create a brief overview of creative fields and related our cases to this, in order to make visible the creative sectors that were represented in our case collection. In the figure below, we highlight sectors where ExPs have been created in **turquoise blue**; and **purple** for sectors represented by other cases in the corpus.

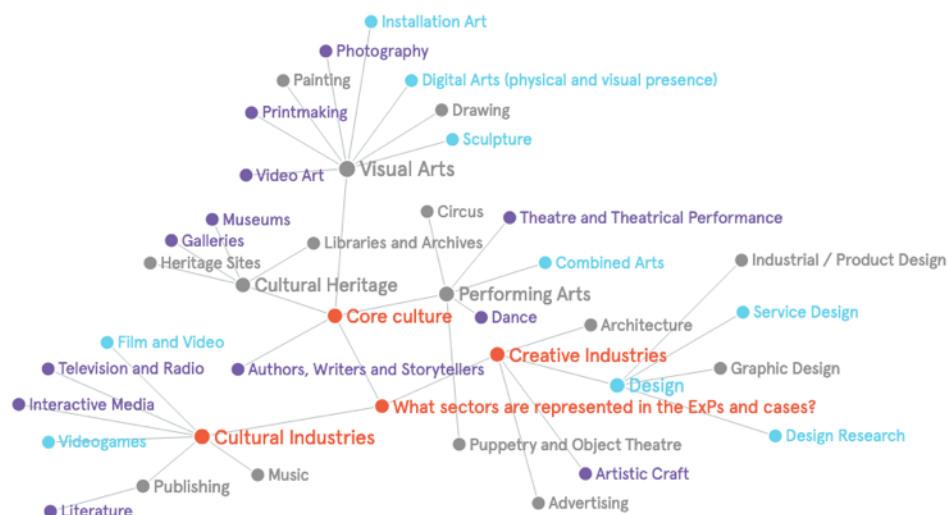


Figure 5: A map of creative fields using EU taxonomies

We also identified the countries of origin for our cases, which spanned the following 22 countries (also illustrated on the map below): Australia, Austria, Belgium, Brazil, Canada, Chile, Colombia, Czech Republic, Finland, France, Germany, Ireland, Italy, Netherlands, Poland, Singapore, Slovenia, Spain, Sweden, UK, Ukraine and USA.

While a strong representation of European cases is to be expected in an EU project, the need remains for further research to connect transformation studies in the Global North/West to movements in the Global South, which use different framings and languages to pursue similar aims – for example, as Arturo Escobar does in his book *Designs from the Pluriverse* (Escobar 2018) – and also to look towards Asia.

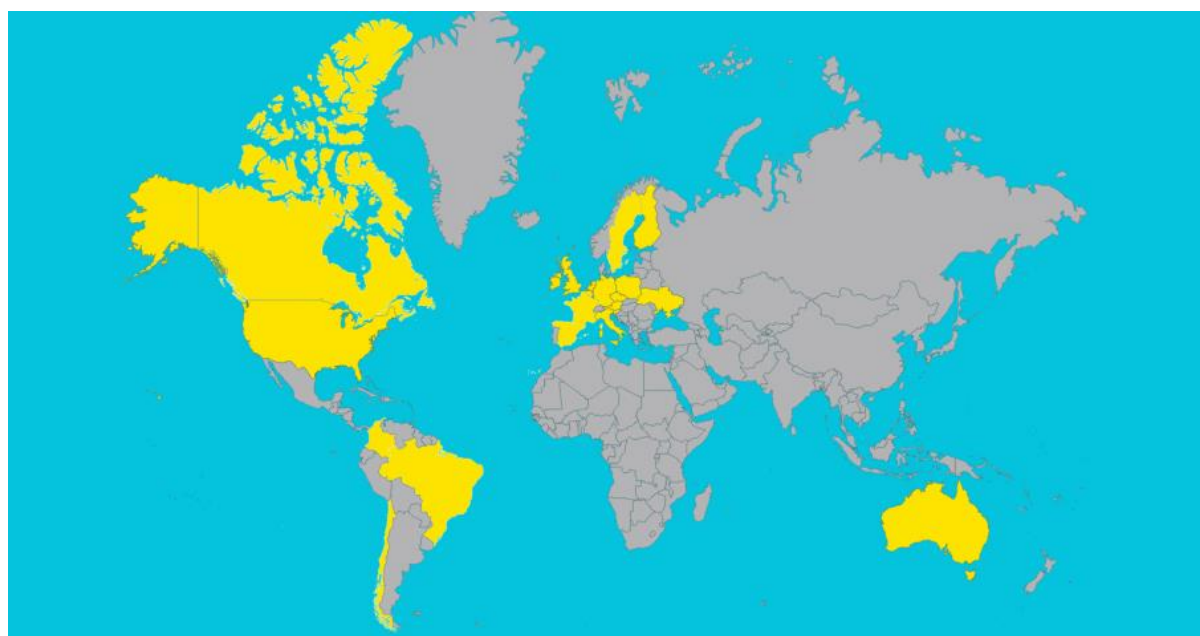


Figure 6: Map of countries represented in the case corpus (where known).

How we have analysed case data in this Deliverable

We have analysed this corpus of cases in two different ways. Our final transformational strategies are drawn from both analyses. Firstly, we looked at the 148 cases as a group, mapping them in several ways in order to identify patterns. Next, we developed one extended ExP case study that allowed us to go into further detail.

1. Analysing the entire case corpus

We have collected rich data on the 20 ExPs that we commissioned as part of the CreaTures project (including participatory workshops, interviews, participant observation, reflective diaries and surveys, comprising over 100 pieces of data). This data was produced through close involvement with the commissioned artists and producers, many of whom functioned as full partners and co-researchers in the CreaTures project from outset.

For the other 128 cases, we have considered mostly online documentation, which has ranged from very partial traces on unmaintained websites to comprehensively documented projects, accompanied by research papers. For 91 of the 148 cases, we were able to locate good quality documentation, for example in the form of explanatory videos, artist interviews, blog posts and academic texts. However, we consider the non-ExP cases as ‘thin’ data, which helps us to extend the richer ExP data and support our description of strategies.

How then, did we go about processing and analysing these heterogeneous data? For each case we undertook desk research to locate any available online documentation. We then added the case to the Graph Commons network-mapping platform and gave it a provisional ‘type’ e.g. an artwork, an organisation, a network, a book, a person. This first-stage case labelling is shown below. We used colour coding to show which broad fields each case was coming from, reflecting CreaTures’ focus on arts, design and social change practices. Also present are areas related to interdisciplinarity, research, education, campaigning and writing. This figure gives a sense of the variety of cases analysed.



Figure 7: Colour-coded taxonomy for the case corpus

Next, we read all the available documentation for each case and wrote summaries of the topics covered in each case and the strategies that we identified in the documentation (or ExP data) as being used by creative practitioners to prompt transformation.

An example of the summary record of a case is below: the human and environmental rights research group **Forensic Architecture**. We pick this example to share because it is unusual in being at the interfaces of creative practice, research and activism:

Type: Research Group

Website Excerpt: *'Forensic Architecture (FA) is a research agency, based at Goldsmiths, University of London. We undertake advanced spatial and media investigations into cases of human rights violations, with and on behalf of communities affected by political violence, human rights organisations, international prosecutors, environmental justice groups, and media organisations.'* *'We have used exhibitions in cultural and art institutions to create alternative forums for the presentation of our investigation and ideas, but also to critically engage with the institutions that host us, to debate questions of how to display... scenes of violence'. FA website.*

Topic: Human and environmental rights

Case Description: *Forensic Architecture undertakes investigations into human and environmental rights violations. FA is notable in its use of creative methods – from the fields of 3D architectural modelling, motion design, and machine learning – to produce new techniques, protocols and tools to investigate human and environmental rights abuses, and to generate forms of evidence for accountability processes. They are part of a wider movement of 'open source intelligence' and have created tools that other individuals and organisations can and do use. Their investigative work is regularly shown in cultural and artistic venues, creating alternative fora for the display and discussion of human and environmental rights abuses.*

With other researchers, Forensic Architecture has advanced a different notion of aesthetics and that departs both from well-known Kantian perspectives of aesthetics as a matter of subjective experience opening onto the possibility of a universal positions and the Romantic tradition of art as more-than-rational meditations on experience. In their book Investigative Aesthetics, Matt Fuller and Eyal Weizman argue that aesthetics is a quality of sense-making practices not limited to human subjects but also existing in other species relations and across technological infrastructures: whenever 'sensing and sense-making is involved – in, for instance, detecting and connecting patterns, phases and trends and calculating their meaning – a manifestation of aesthetics is inevitably in operation' (Fuller and Weizman 2021, 53).

Once the records were generated, we took the 'topic' data for all 147 cases and clustered these, finding indicative patterns. We then did the same in order to identify 'strategies' – novel forms of practice that seed or steer change processes, which could be useful to other practitioners (to operationalise) or sustainability transformations researchers (to study further). Additional highlights, such as the theoretical perspectives from *Forensic Architecture* shown above, contribute to our discussion.

Throughout this coding and clustering, we have followed the same reflexive thematic analysis approach as in D2.3, developed by Braun and Clarke (2019). This is in line with our orientation to research, where the researcher's subjectivity is acknowledged as a positive influence in the meaning-making process (Braun and Clarke 2020; Law 2004). Braun and Clarke's method involves six non-linear phases of work: data familiarisation, systematic coding, generating initial themes, reviewing themes, defining themes and writing-up, which

we have used, first, in the production of the case records and, again, in their comparative analysis. Mapping the topics helps us to identify potential transformative strategies (the focus of this Deliverable) and examine the space of the designs we are considering.

2. ExP case studies

In the later part of the Deliverable, we present one extended ExP case study that enables us to pull out more detailed examples of processes indicated in the wider analysis. Here, we have used the same principles from Braun and Clarke (2019). The ExP case studies allow us to recognise and explore the significant complexity in the relations that creative practitioners work with, across networks of people and entities, and across time, in terms of the iterative, long-term programmes of work, which many interviewees described in D2.3. This helps us to develop the idea of strategies and explore their uses.

A note on ‘transformative strategies’

A strategy is usually understood as a plan of action that is intended to achieve a longer-term aim. In this Deliverable, we use the term to refer to the processes used by creative practitioners in their work to help connect people to sustainable futures. We have chosen the term *strategy* to denote somewhat stable processes. These strategies may have been arrived at through multiple iterations and sets of reflections (in contrast with the experimental or embryonic processes that are also characteristic of arts practice as it evolves). We might see these as the result of practitioners’ design research in iterating and testing their processes until achieving the desired effect.

As the analysis sections will show, the strategies include processes happening at a range of different scales: sometimes reflecting the interpersonal facilitation of workshops inside a project; sometimes referring to the structuring of an organisation. As in Bennett et al.’s approach, we do not pre-specify any particular scale or object: we see these cases as ‘seeds...social, technological, economic, or social-ecological ways of thinking or doing’ that have high transformative potential and could benefit from spreading across creative and sustainability communities in order to increase understanding of how change happens, and for the promotion of wider eco-social benefit (Bennett et al. 2016).

Not every practitioner documents these processes in formal ways (though others keep extensive records in notebooks and sketches). Where we studied CreaTures ExPs, we have identified strategies from the multiple interviews undertaken with each ExP partner. Indeed, one of the findings of our research with ExP partners was that insights often came about when reflecting together on their projects, particularly looking back at previous iterations. For projects with relatively scarce documentation, the relevant CreaTures researcher identified the strategies that they saw as most significant in relation to the overall case corpus. Since the study is not aiming to be representative but to show the diversity and detail of practice-focussed knowledge, we paid attention to novel or innovative strategies and how/why they were evolved, and instances of strategies that were common across more than one example. We can only show a snapshot of example cases that provide indicative signals into wider trends.

We include here, by definition, successful strategies. The examples we give are honed work that is capable of achieving an outcome that can be pointed to and repeated. In groupwork and with meaning-making, there is always difference between sessions and across individuals. What we draw attention to here is that these differences do not define this work. Instead, clear patterns emerge as to how an encounter or experience is likely to impact and these form the basis of the strategies included in this document. In the case study, we also

reference some of the less successful work produced as part of the learning that created the current, more successful, iteration. That learning continues. As noted above, the strategies draw on *somewhat stable processes*, made stable enough through our research to influence and inform others, since they are abstracted and aggregated across examples.

Who / what gets transformed through creative practice?

In this Deliverable, we seek to understand practice and the dynamics of change identified by creative practitioners and the social science researchers (with expertise in Design Research and Science and Technology Studies) who are working with them. It follows, then, that in thinking about who or what gets transformed through creative practice, we draw on the distinctions made by practitioners themselves. In CreaTures workshops, our creative partners identified a range of groups that were engaged through their work, including (moving outwards):

- members of their own team
- public audiences and participants
- artists and other creative practitioners
- experts (including academics in scientific fields and policy makers)
- institutions and civil society

Practitioners also noted complex relations of mediation, where their work is taken up and exposed to new audiences through media channels as varied as formal art criticism and national press outlets, to informal write-ups in blogs and posts on social media.

These groups are shown in a ‘circles of stakeholders’ map below, reproduced from Deliverable D5.3.

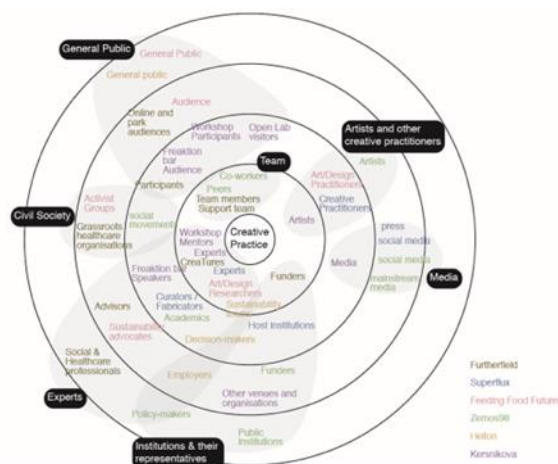


Figure 8: Circles of stakeholder diagram reproduced from D5.3

It is important to note the heterogeneity here. Creative work may not always seek primarily to move audiences comprised of ‘the general public’. In the strategies below (especially with regards to process design), we find creative practitioners participating in processes that combine multiple stakeholder groups. Art and science collaborations are a good example, since these put artists and domain experts together to have conversations and to create outcomes. The outputs (in the form of artworks or pieces of writing) will often reach public audiences. This is one primary target for influence, however the intention is also that the practitioners themselves will be changed by the encounter and, in some cases, the institutions in which

they are embedded will also be affected. In addition, as arts-science projects proliferate, writing and thinking about particular strategies accrue with them, opening these up to wider discussion (e.g. Kagan 2015; Muller, Froggett, and Bennett 2020). In the analysis below, we indicate primary stakeholders, however, we note here that this remains a complex interplay between audiences that directly experience a work, peer networks and wider processes of mediation.

Section 5: An overview of the case topics

We use the term ‘topic’ to denote the subject matter that each case engages with. Topics are a significant aspect of how creative practitioners contribute to greater environmental awareness (Kagan and Kirchberg 2008). Rather than a didactic model, where creative practitioners merely communicate messages formulated by other actors (as critiqued, for example in Maggs and Robinson 2020), in the CreaTures project, we see our creative partners engaging in reflexive processes of enquiry that move across particular subjects. Sharing what was learned is an important dimension of creative work. For Ruth Catlow, in the *Treaty of Finsbury Park* case (described in Section 8), learning that park grass is a monoculture that does not nurture biodiversity was an insight into a micro world. She chose to share the subject matter – and the feeling of surprise and discomfort on learning about it – as part of the *Treaty* project. Our separation of ‘topics’ and ‘strategies’ is therefore somewhat artificial, but is used to help elucidate what is important in creative practice with transformative aims.

It is possible to identify at least one topic for each case included here, despite the thinness of some of the case documentation, since every transformative process needs an end in sight. Some cases fit the ‘topic’ category more easily – single artworks for example, often have a clear intent to engage with one or two specific subjects and a process for doing so. As cases become more complex, it becomes harder to situate topics, since for example an organisation might work on a wide array of topics. In addition, due to the reflexivity of processes of enquiry in creative and research fields, cases often also engaged with their own processes as objects of study: in projects relating to post-fossil futures, the practice of *future-making* cannot be conceived as a separable delivery mechanism – rather it is a topic of study and iterative reflection in its own right, as well as a catch-all for many different processes.

We clustered the 148 case topics into 21 overall topics; 8 were larger clusters (having more cases associated with them), and 13 were smaller clusters. These are illustrated below.

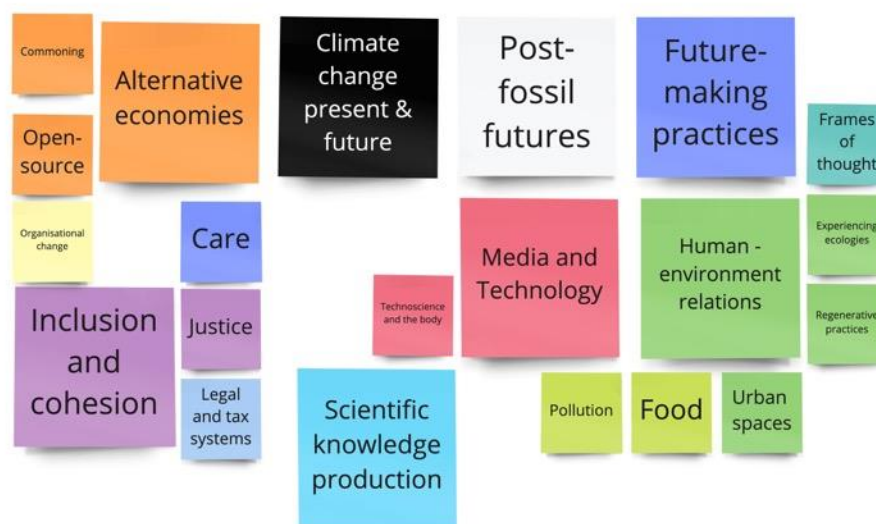


Figure 9: Individual case topics were clustered to create 21 overall topics

We used the same colour coding to create a sub-category relationship, e.g. **Justice** stood out as a direct sub-category of **Inclusion and Cohesion**. Where we observed strong resonances (but no clear sub-category relationship), we used a related colour and position, e.g. **Care** and **Legal and tax systems**. The topics analysis board, hosted on the web platform Miro, can be accessed [here](#)⁴.

Getting a sense of the topics that our cases focus on is helpful in understanding the range and focus of our sample and its general affinities and differences to the sustainability transformations literature. The term ‘sustainability’ itself is absent, but the two most urgent sustainability challenges – climate breakdown and biodiversity loss – are central. Comparing these with recent review articles in sustainability literatures, we do not see a focus on ‘problem domains’ such as ‘energy systems, water systems, food systems, urban systems, and green jobs’ (Patterson et al. 2017, 2). There is greater resonance with a literature review article by Moore et al. on the subjects of transformation, namely: Energy, Society, Governance, Urban/suburban, Economy, Technology, Ideas/narratives, Market, Infrastructure, Research/science (Moore et al. 2021, 8).

Thus, what is striking is that the topics are not problem-focussed, but opportunity-focused and largely reflect the ways that creative practitioners are doing to try (from their standpoints) to resolve these huge challenges. Unlike some sustainability science communication, this creative work is not dedicated to explaining and influencing people within frames of disaster and collapse but looks to possibilities and change. As Rayner and Minns suggest, in the EU HELIX project, ‘Communicators must be more than ‘narrators of doom’, but recognise the need for ‘active hope’, constructed from realistic goals, imaginable paths, doable tasks and a meaningful role in addressing the problems at hand. New, more dialogical forms of communication, with various audiences in a range of venues are needed, in which new high-end climate messages can be conveyed and processed with citizens and decision makers’ (Rayner and Minns 2015, 3). The topics and approaches here demonstrate that our sample deals with this affective and dialogic challenge and this results in a different set and clustering of themes.

Topics Analysis: Key Clusters

This can be seen more clearly in the next set of figures. Below, we have reproduced a series of snapshots from our analysis board. In the following figures, the white squares show the topics identified in each particular case, and how they were clustered to produce themes and sub-themes.

1. Climate change and post-fossil futures

In the first key cluster, the **Climate change** topic is not merely represented as a problem but already has a present and ‘futures’ element, connecting with another topic on **Post-fossil futures** (see below).

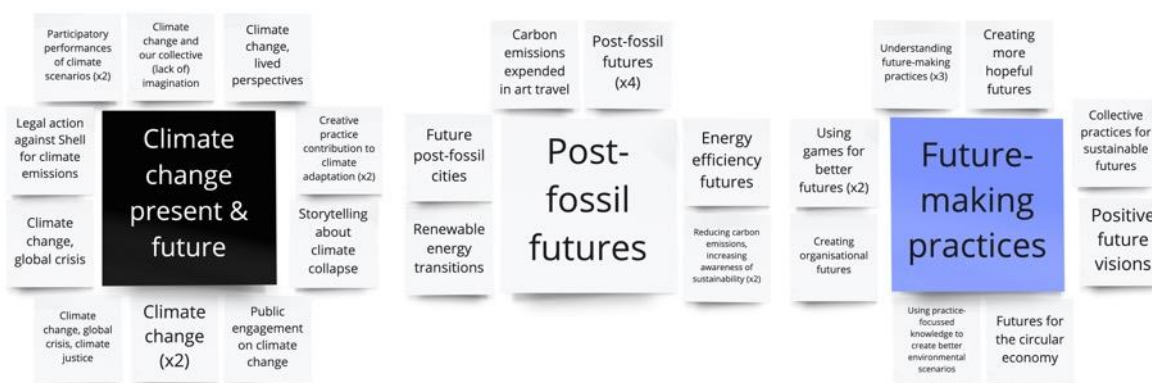


Figure 10: Cases related to climate change, post-fossil futures, and futures more generally

The focus is on emissions and energy-reduction, but is being understood through the prism of futures, and the fully embodied process of creating collective futures that motivate action in the present. Indeed, **Future-making practices** appears as topic in its own right, demonstrating not only a sense of possible progression, but also reflexive patterns of enquiry.

2. Human-environment relations

The second key cluster is related to **Human-environment relations**, taking into account a broad range of activities, from thinking about the ethics of human-animal relations, to understanding the potentialities of working with mycelium (see below).

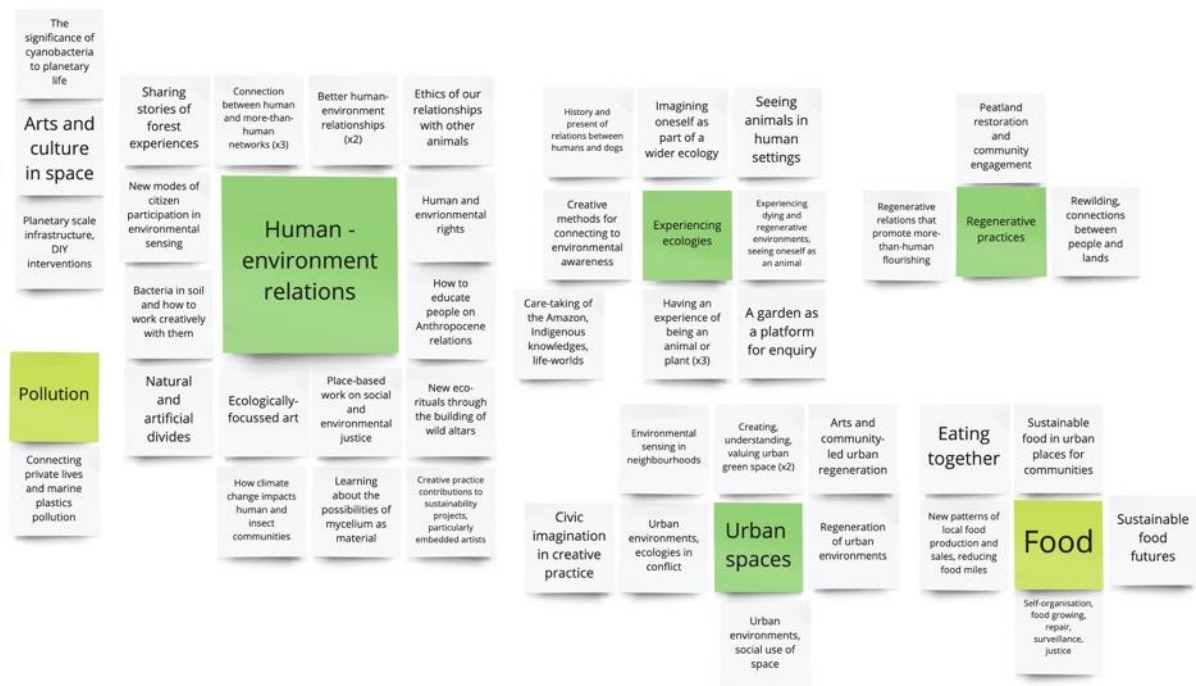


Figure 11: Similar topics have been grouped, e.g. 'Having an experience of being an animal or plant' was a topic in x3 cases.

Several notable sub-groups emerged within this overall bracket. **Experiencing ecologies** captures a cluster of projects that aim to challenge the Global Northern culture of individualist anthropocentrism by helping people to experience themselves as part of ecologies and in balance (or out of it) with other species. A second sub-group of cases focussed on **Urban spaces** – understood to be space where ‘tuning in’ to plant and animal rhythms is more challenging. A small sub-group emerged around the **Regenerative practices** of restoration and rewilding. **Food** is a key ‘problem domain’ in sustainability, and in this chart we see the use of the term ‘sustainable’ and the focus on carbon reduction in association with it. **Pollution** is a much smaller topic than expected and only appeared in two cases on marine plastics and environmental sensing.

3. Alternative economies and care

Other topics have been of interest to creative practitioners and researchers for some time, such as **Alternative economies** (see below).



Figure 12: Commoning; Open-source; Alternative economies; Care

Foundational to these approaches has been a vibrant strand of research in feminist economics. This has not simply found ways to value women's contributions in mainstream conceptions of the economy, but has rather transformed our understanding of 'the economy' from monolith to patchwork, framing it as a site of experiment and change (Gibson-Graham 2006). Within this field, **Commoning** has become an important site of experimentation in other ways of organising, following the pioneering work of Elinor Ostrom (2015). **Open-source** sharing emerged from debates on copyright and computer code (e.g. Lessig 2004), but has subsequently become an important organising principle for creative endeavours.

Care has also been a resurgent research topic in feminist theory and praxis. Recent work has sought to move beyond care relations between humans to connect more explicitly to care for other species and environments (Puig de la Bellacasa 2017). It is beginning to enter the sustainability transformations discourse (Moriggi et al. 2020). Here, it represents a set of relations and a dimension of practice that disrupts understandings of exchange as transactional.

4. Inclusion and cohesion

The next cluster focusses on **Inclusion and Cohesion**, which are intense objects of focus in creative practice due to historical and current inequalities in race, class, sex and gender, amplified by recent social movements that seek gender and race equality (see below).

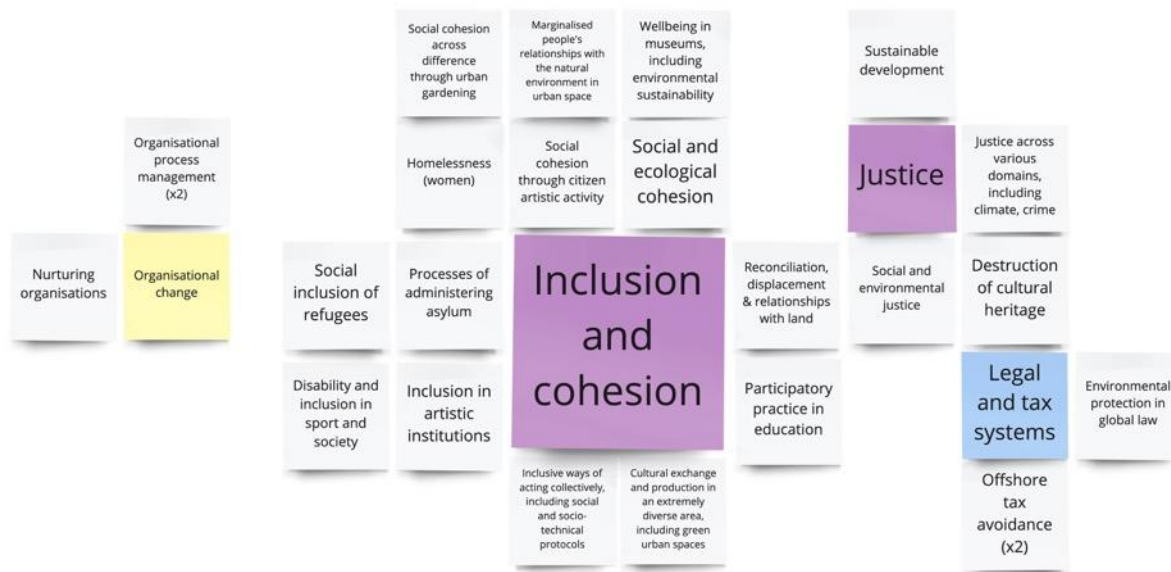


Figure 13: Organisational change; Inclusion and cohesion; Justice; Legal and tax systems

Inclusion and cohesion have also been central topics in some aspects of sustainability transformations research; particularly strands emerging from sustainable development, such as the pathways approach (Scoones et al. 2020).

5. Media and technology

There was a significant interest in **Media and technology** (see below).

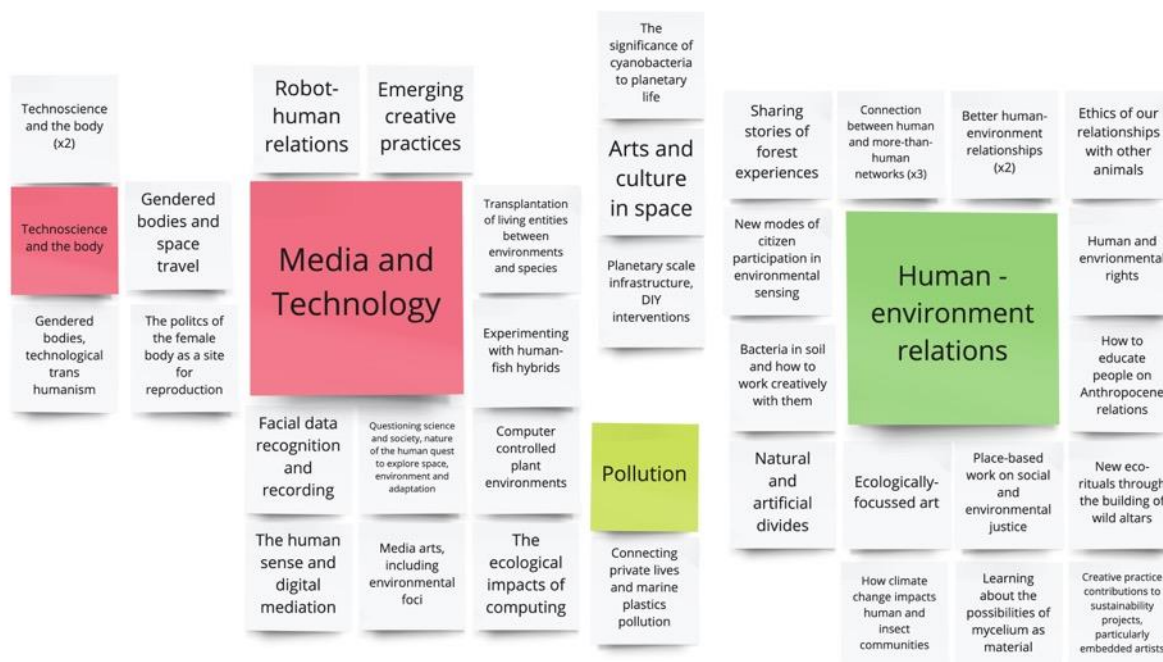


Figure 14: Media and technology overlapping with Human-environment relations

This is perhaps unsurprising since the development of planetary-scale computing infrastructures has been a significant source of transformation over the last 40 years, leading to an instrumented 'computational planet' (Gabrys 2016). The **Technoscience and the body** sub-topic highlights the range of trans- and post-humanist perspectives that have been

developed in creative practice, particularly in media art. Technology is an important mediator for **Human-environment relations** and in many cases these topics demand an overlapping reading, as the Figure above shows. Post-anthropocentric thinking is also proving fruitful for re-imagining more positive relations between human and environments.

6. Scientific knowledge production and changing frames

Scientific knowledge production is largely connected here to interdisciplinary encounters and forms of translation, where creative practitioners were able to work collaboratively together. Finally, the small cluster **Frames of thought** holds two unusual cases where the topic was the metaphors and frames of thought that we currently live by (more specifically in challenging or re-framing them).

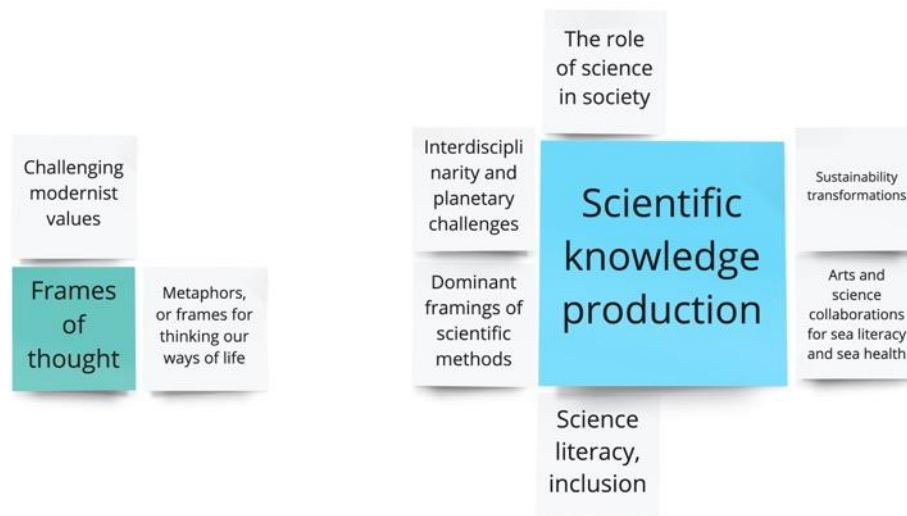


Figure 15: Themes on Scientific knowledge production; also shown are Frames of thought

This review of topics gives us a detailed sense of the subject matter that creative practitioners – at least those included in this case corpus – are engaging with in their work and sharing with audiences of all kinds. In summary, what then, do these cases prioritise within the broad area of sustainability? They are –

- alert to climate breakdown and raising awareness;
- imagining post-fossil futures;
- talking about the connection of people to ecologies, including in urban space;
- reflecting on alternative arrangements to extractive forms of capitalism, including commons and open-source arrangements;
- seeking inclusion and cohesion, justice and care;
- engaging with media and technology;
- considering science;
- platforming interdisciplinary.

In galvanising urgent collective action on sustainability, it matters what topics are current in the creative and cultural spheres. The list shows our sample of creative practitioners making a broad response to the current challenges for our planet, all of which have strong bearing on sustainable futures. However, like research projects of other kinds, individual activities have tightly-related foci so that projects are manageable and attain intended outcomes. In aggregating these qualities above, then, we show the range of understandings operating across our sample, but also note that practitioners are aware of the interrelated elements and how they, as project-owners and organisations, relate to them. In their contextual work, there is a refreshing quality of joined-up thinking of the kind urged by Nexus projects (a group of independent research initiatives calling for increased communication over the 'nexus' of land use, water, food, energy and associated topics)⁵.

Section 6: Transformative strategies

We now transition from our discussion of topics to our analysis of strategies. As previously described, we see strategies as somewhat stable practices that creative practitioners use to seed and to steer change processes. Creative cases represent complex and situated activities in constantly shifting social and material worlds (Suchman 2007). When we pick out 'strategies' we are inevitably abstracting from this. Our intention in pulling out transformative strategies is to highlight interesting and valuable forms of practice without generalising in a way that implies they will be usable in all situations (as a 'recipe' or 'toolkit' would). Our aim is to provide accounts of strategies that allow other creative practitioners, researchers and policy makers to understand how creative practitioners are working to bring about change. This section addresses some of the complexity around strategies by introducing several different levels of analysis: firstly, we review 'meta' level strategies that are used in almost all of the cases. Next, we describe the level of detail that different strategies provide: in more complex cases, strategies give an overview of the action that happens across a project. In simpler cases, strategies can go into greater depth and detail, for example picking out specific interpersonal techniques and tactics.

'Meta' strategies

In our case analysis, we found that there were some strategies that were common to the majority of our cases. We call these 'meta' strategies. These are key mechanisms that creative practitioners draw on to trigger and to embed change within their work. Many of these are well recognised within sustainability transformations research on creative practice. Indeed, in Deliverable D2.3 we have written in detail about three of these four (imagination, anticipation, aesthetics and experience). We summarise these again here and add an additional section on reflection.

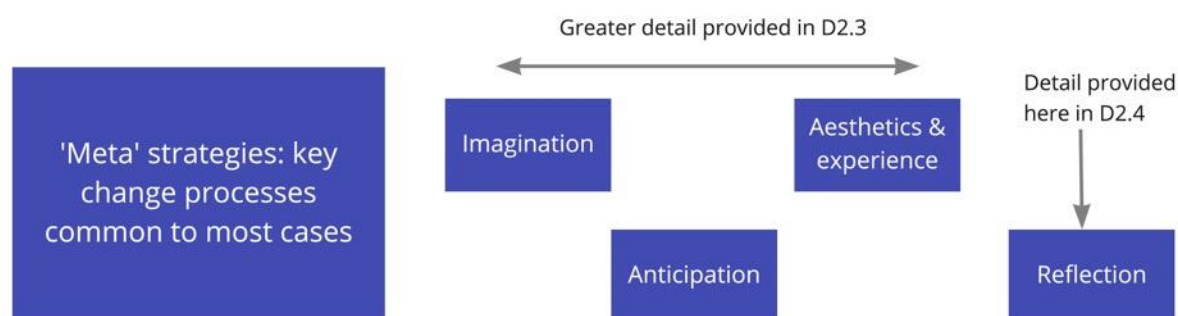


Figure 16: A visualisation of four 'meta' strategies that are common to most cases

The Imagination

The imagination plays a significant role in the work done by practitioners and asked of participants or audiences in sustainability-oriented works, particularly on our ability to imagine sustainable and just futures. Deliberate transformation projects involving art, design and social change have consistently produced the findings that these types of engagement can help to stimulate imaginative capacities in individuals and collectives (Hajer and Pelzer, 2018; Hajer and Versteeg, 2019; Maggs and Robinson, 2020; Bendor et al., 2017; Strippel et al., 2021). Moore and Milkoreit see the imagination as a necessary capacity 'for securing ecological, social, economic and cultural well-being in times of rapid and often unpredictable global change' (2020: 1). For them, the term straddles multiple meanings and mechanisms: as a cognitive capacity, imagination is the ability to generate ideas in the mind about things

that cannot be perceived with the senses, including alternative or fictional realities (2020: 3). However, they also point out that several recent accounts have shown how the imagination is a relational and situated phenomenon, that is ‘both individual and collective, self- as well as other- directed, a necessary condition as well as the product of the dialogical process’ (Stoetzler and Yuval-Davis 2002, 316 their emphasis). Indeed, further work point to the existence of commonly held social imaginaries (e.g. Taylor 2002; Jasanoff and Kim 2015). These theories point to a complex interplay between situated processes of imagining amongst individuals or small groups, and patterns of shared meaning generated across wider, often distributed collectives.

Anticipation

A second key concept and mechanism concerns anticipation (and more specifically, the production of futures). In transformations research, anticipatory approaches are valued for their ability to identify diverse futures, and to create participatory processes that can engage multiple actors (Muiderman et al 2020: 13). As we have seen, imagination is important in understanding where we *could* go – through envisioning both likely and desirable futures. Futuring may be used to form deeper knowledge, mobilise communities, to plan and build capacities, or to enhance democratising participation in decision-making (Muiderman et al. 2020, 3) and the methods that fall out of these goals are very different. As Light says: ‘there are politics to futures in the present, and ethics to one’s methodology for impacting them’ (2015: 86-87). Therefore the creation of futures is recognised as having a political character: these are not merely logical spaces but rather, ‘moral space[s] of possibility where what one conceives of as possible in the future influences the choices made in the present’ (Kendig and Bauchspies 2021, 229), which scholars regard as a crucial form of agency. Anticipation is ‘one of the most relevant – if not the most relevant – value-generating, sense-making’ forces (Poli 2015, 108). As a result, ‘the exercising of “anticipatory consciousness” is an active political subjectivity’ (Amsler and Facer 2017) that underlies other forms of agency.

Aesthetics and Experience

One of the key contributions of creative practice is concerned with the perceptual qualities of a work – how it looks, feels, smells and the sensuous atmosphere that it evokes. We note that this tends to be described differently according to creative sub-fields – in transformations (and in allied futures disciplines), these qualities are often narrated in terms of participant or spectator experience (e.g. Hajer and Pelzer’s *Energetic Odyssey* explores staging and immersion as ‘techniques of futuring’ for energy transformations, 2018). In research more closely allied to artistic disciplines, aesthetics is a more prominent way of understanding the staging of a work and its agency. Whilst this term is conceptually elastic, it has been widely understood to refer to the study of art’s qualities and their impact on perceptual capacities.

Contemporary thinking has moved on from well-known Kantian aesthetics (as a matter of subjective experience, opening onto the possibility of a universal position), and the Romantic tradition of art as more-than-rational meditations. In particular, the turn to posthumanism has prompted artists and researchers to question whether human perceptual capacities should be privileged, since animals, plants and autonomous digital systems often take centre-stage in digital artworks (as sentinel species, phytoremediators, and AI bots, for example). In this complexity, aesthetics is increasingly understood a quality of sensing and sense-making – Fuller and Weizman suggest that whenever ‘sensing and sense-making is involved – in, for instance, detecting and connecting patterns, phases and trends and calculating their meaning – a manifestation of aesthetics is inevitably in operation’ (2021, 53). This is an understanding of aesthetics as embedded into the qualities of epistemological (broadly, knowledge-generating) processes to produce – in the case of Weizman and Forensic Architecture – investigations of environmental destruction that stand as evidence and also stand as artworks.

Reflection

Understanding reflection – and how it is interwoven with imagining future states – means taking the full spectrum of human experience into consideration. Kelty writes, poetically:

‘we are always engaged in a constant and immediate updating of our values through a habitual and repetitive participation. We experience intuitions, emotions, affective reactive states that are trying to tell us something – something important – but which are institutionally and procedurally incinerated. The soft parts are burned away so that only the bones remain’ (Kelty 2020, 62).

This description captures something of the liveliness of everyday experiencing, and the tendency for aspects of this to fall away – specifically those parts that do not have coherence within procedural and institutional realms. We suggest that a partial motivation for the turn to creative practice to deal with values, beliefs and worldviews is due to their exclusion from many forms of scientific practice that generate knowledge about sustainability challenges. In contrast, creative practices often produce situations in which experiencing is heightened. Much art, for example, aims to induce affective reactive states that are distinguishable from everyday life, and therefore prompt reflection and discussion. This applies particularly, when aesthetics is seen as a dimension of processes of sensing, and sense-making from experience (as described above).

Indeed, Froggett et al. argue that it is in this space of experiencing that the significance of creative practice lies:

‘Between the metrics of participation and what some regard as the intrinsic nature of an artwork lies an area that poses particular challenges for research – that of audience experience in its sensory, emotional, aesthetic and cognitive aspects. This is the ground where individuals and communities can be moved or transformed by a process, object or concept’ (Froggett et al. 2014, 9).

Muller, Froggett and Bennett’s psychosocial approach ‘engage[s] with arts and humanities to capture the situated complexity of human experience as felt, represented and reflectively processed’ (2020, 322). In their paper on arts and science collaborations, they focus on the ‘not-yet-articulated’ affective and aesthetic dimensions of experiencing an arts-science artwork and how to make these articulable. They use a method of associative and then reflective group work, to share these ‘affective and aesthetic dimensions as they arise (psychologically) in the minds of participants and are communicated (socially) in a group setting’ (2020, 322).

Many of the cases in our corpus provoke individuals’ internal processes of sensing and sense-making in shared public space (the social space of the gallery, for example). A subset of these go further and open up dialogic spaces to share the qualities of that experience more fully within a group (such as the process described by Muller et al.). These are intended to bring the ‘not-yet-articulated’ of an artwork or creative experience more comprehensively into view, as a shared object to be worked on collectively. Reflection is a supplement to experience that creative practitioners harness to ensure that experiences are not forgotten but committed to memory.

Earlier research in a CreaTures vein describes how reflecting – and in particular reflecting as a group that has shared an encounter (with a practice and with each other) – enables the experience to be reconciled into everyday life. Participants’ experiences can move from temporary ‘happening’ – to meaningful encounter in the course of collaboratively reflecting (Light 2006). In a project on food growing, Light and Welch found that collective storytelling revealed – often to the participants themselves – the many non-material benefits that come from the activity. A key part was engaging with others to reflect, hearing other people’s ideas

and responses, and learning that others could be moved by similar experiences. The authors ask how far 'environmental reflections gathered during the project are an intrinsic part of the act of growing, or part of the act of reflecting on growing, brought about by the research', concluding that the salience of this thinking was revealed by reflecting together and therefore 'cultural events to reflect on growing are particularly valuable' (Light and Welch 2018).

Looking more widely across creative fields, we can find similar instances of these intertwined processes of experiencing and reflection. In the field of design futures, Light argues that speculative objects need to be embedded in a reflective process to take on their fully speculative character: 'a simple placing of an object/narrative in public view, without creating an interpretative process round it, may not give rise to any critical or speculative thought... at the extremes, the absence of any focusing object leaves only a process of engagement with no direction; meanwhile the absence of a process of engagement leaves only an object with the possibility of myriad personal engagements or none, but no shared construction of meaning' (Light 2021, 6).

Likewise, in the field of serious games, collective 'debriefing' discussions are often run after the active gameplay has concluded, an 'activity for the reflection on and the sharing of the game experience to turn it into learning' (Crookall 2010, 907). Theories of experiential learning in the gaming field put forward the idea 'that the real (solid, lasting, meaningful, and deeper) learning comes not from the game, but from the debriefing' (Crookall 2010, 907). Experiencing something and then reflecting on it, is a common technique used across creative fields to draw out the 'not-yet-articulable,' and to make it present as an object of individual experiences that becomes shared in a group setting and then becomes part of a project of shared meaning-making, from which learning can take place (Jaakkola et al. 2022). We will give an in-process example of debriefing in our extended case study of the *Treaty of Finsbury Park 2025*, in Section 8.

There is, therefore, a clear distinction between participant reflection in the form of feedback that supports artists developing the effectiveness of their work (which we see in the design process of many of the practitioners we have been working with) and reflection built into the participation activities for the purpose of sharing experience and embedding it as learning. The same session might provide both functions, but they are not to be conflated for (particularly the second function) is where transformation takes root.

These meta-strategies have a transformative focus in that they work as a process to activate change-making, rather than contribute knowledge alone, as science seeks to do. There is no appeal to impartiality, but an ethical charge that understands itself as seeking to make a difference. Hummels et al. (2019) highlight that when working towards transformative change, a first-hand perspective is needed: those aiming to foster a change need to engage with, live, feel, embody and 'become' the change on their own. Moore and Milkoreit talk of the lack the ability to imagine adaptive and regenerative futures (2020: 1). Deliberate transformation projects involving art, design and social change have consistently produced findings that these types of engagement can help to stimulate imaginative capacities in individuals and collectives (Hajer and Pelzer, 2018; Hajer and Versteeg, 2019; Maggs and Robinson, 2020; Bendor et al., 2017; Stripple et al., 2021).

Light identifies a set of conditions that need to be met, to greater and lesser degree, to enable people not only to imagine different futures, but work towards them in combination with others:

'Forum – a space to contribute and people to listen

Motivation – the desire to contribute

Articulacy – the vocabulary and fluency to present one's ideas in a particular domain

Confidence – the assurance to become involved

Knowledge – enough understanding to have an opinion

[Sense of] Agency – an awareness that change is possible and of oneself as an agent of change

Association – the ability to interpret things together or see links' (Light et al 2009).

Different transformative strategies address different components of this set of conditions and while much science practice becomes focused on Knowledge, crucial to a move from knowledge to action are both Motivation and a Sense of Agency. Some artistic practice takes these personal qualities as their core focus, awakening people's concern and showing them paths for acting on it, providing Forum and building Associations. These, then, are the basis of transformative strategies and strategies work differently according to the type of motivation they are trying to inspire. Such practices recognise that meaning is individually and collectively constituted and work at existential and emotional levels of experience, and as well as presenting relevant knowledge, making links between local matters and the global systems that are influencing them.

The next section addresses how the different types of strategy are understood in this document and we then draw out a series of analyses to show what they contribute to engaging and inspiring people to change.

Strategies: Thinking across different levels

In most of our cases (in the analysis below), the central object is a creative project or a creative work (see an initial overview in Figure 7). For example, we can visit the website of the design research project **Remendar Lo Nuevo** (that works with womens' textile collectives in post-conflict areas of Colombia), view the documentation of the sewing practices, and read academic accounts written by the research team. In this case, we are able to pinpoint specific techniques and tactics that the project team are using to engage with people – i.e. interpersonal strategies inside of the creative practice itself.

Other cases, however, include larger and more complex objects, such as organisations. For example, what is significant when reviewing the documentation about the **Company Drinks** organisation (which grew out of a simple practice of walking historical patterns of womens' migrant labour into a wider organisation with a community and growing space) is its focus on the multi-layered programming of creative, community and environmental activities – resulting in the attraction of diverse audiences. Here, strategies remain at a higher level: since they refer to how an organisation works with a wider set of audiences. We use the diagram below to visualise this distinction.

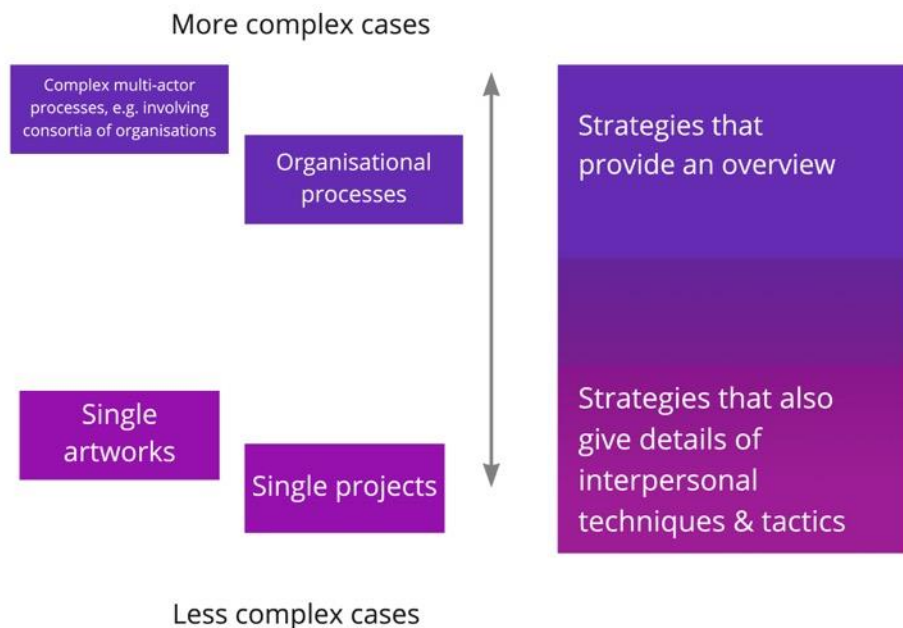


Figure 17: Demonstrating the range inside the broad category of 'strategies'

Company Drinks is an example of a more complex case, where the strategy reflects an overview of an organisational process. **Remendar Lo Nuevo** is an example of a single project, where we can look more specifically at the creative practice (of sewing together) and delve more deeply into the interpersonal techniques and tactics that are used (*how we get together to sew, in a post-conflict setting and how exactly change to persons is understood to happen*). We note that the quality of the documentation also has an impact here, since trace documentation often fails to capture the level of detail required to describe interpersonal techniques and tactics, which are sometimes not recorded at all.

What can these varied accounts offer to readers, or CreaTures website visitors? What exactly, can be 'reproduced' here? **Remendar Lo Nuevo** is a project that has taken place in unstable post-conflict settings where relations between people (and with environments) have been fractured. Although this project is still profoundly anchored in place, with highly specific political dynamics at play, we can learn how/why this has unfolded in effective ways using forms of material making (by creating spaces that use sewing to facilitate listening and contemplation). Strategies aim to provide new insights without providing a specific recipe – providing an invitation to think more deeply about the role of making in groups, or to try out textile practices in settings with others.

Company Drinks is also a highly specific example, and it is unlikely that another organisation would be able to reproduce the same idiosyncratic trajectory (from walking heritage project, to drinks producer, to operator of a space). However, it offers a model of beginning with a single phenomenon and building multiple modes of interlinked environmental, economic and creative production around it – in order to gather and cross-fertilise a diverse set of audiences. A strategy then, is not a specific delivery mechanism for a set of goals that can be adopted by anyone, anywhere – rather strategies offer modes for travelling with others towards a set of goals using techniques that have been iteratively refined (as we describe below) but that unfold differently across contexts.

Stabilising strategies: Iteration over time

Before moving into the detailed analysis in the next section, we want to emphasise how many of the cases that we analysed came out of longer-term processes of enquiry. The

argument we make here has two parts: firstly, that projects and artworks are experimental testing-grounds for new practices, that then go on to stabilise over time. This is an iterative process in which strategies stabilise (and therefore aspects can be adopted if not 'reproduced' in other situated contexts). We can use a mycelial metaphor to describe this, whereby below ground, a process of enquiry slowly continues to expand; from which projects, works, talks and pieces of writing push their way up into fruition. These can be seen as part of the same organic whole.

Through collaborations with CreaTures' creative partners, we have gained deeper insights into this dynamic; for example, we learnt that ZEMOS98's **Commonspoly** board game is an output from a previous project (a new 'green' edition was produced for CreaTures), and that service design studio Hellon's **Sustainability Futures Game** is an internally-produced game that was inspired by the client-led Nordic Mobility Game. This pattern of iteration is significant, since it provides creative practitioners the opportunity to learn about what works in each setting, and the opportunity to fold that learning back into the next version. We suggest that strategies, rather than being the fruits of particular projects, grow across this longer timeline – starting off perhaps as highly experimental arrangements and taking on a more coherent format through variation and repetition.

The second part of our argument, is that this longer-term pattern of iteration also has consequences for how we understand creative practice and transformation. As we have discussed earlier in this Deliverable, sustainability scholars already characterise transformations as happening across a multi-year timespan. It may appear that creative projects are short-term artefacts that, as a consequence, have little to say about longer-term change processes – but analyses of longer-term processes can offer more fruitful foci for tracking change. This builds on the suggestion in D2.3 to work with practitioners' personal or institutional biographies, since practitioners know and understand from observations gleaned within their own practice that societal change is a slow, years-long process.

These observations at least partially explain the tension that exists in creative practice fields; since much 'formal' evaluation is conducted at the project level and therefore takes the *project* as the central unit of analysis. (The UK's Centre for Cultural Value note that evaluation is so disliked that they call it 'the E-word'⁶). As we learned through workshops with CreaTures creative partners (described in Deliverable D4.3), this is often driven by the requirement of funders in response to the award of project-specific funding, and is often a poor fit for the values of organisations and their work. We suggest that a 'project-eye' view of evaluation – particularly where the methods and scope are set by funders – may miss:

- 1) ways that creative practitioners learn about the effectiveness of their work as they are deploying it, which is then adjusted for in further iterations, showing the use of feedback and design process of the work, and
- 2) the wider impacts of practices across longer time periods and beyond initial audiences.

Taking a longer-term view requires finding new ways of producing knowledge about creative practices and cannot rely on existing evaluation processes (see also D4.6). In the CreaTures project we have used genealogical methods that look back on project histories to discern the emergence, stabilisation and iteration of transformative practices; we present an example of this approach in the extended ExP case study of the *Treaty of Finsbury Park 2025*, in Section 8.

Having widened out the scope to include longer-term processes of enquiry, it is also important to understand the shaping factors beyond the control of creative practitioners. Central to this discussion is the precarity of creative and cultural workers both within Europe and beyond. This is articulated by Anab Jain from Superflux, in a recent interview:

“as practitioners, we tend to follow a more organic path of enquiry... if you fund your own setup, and pay the salaries of people you have employed, that means you are in a constant cycle of having to raise funds, and do the work. And so, if we are in that cycle, [the process of enquiry] is more organic, because we will be drawn towards projects that bring in money... So we cannot follow what is perceived by us as a more academic course of enquiry where we do a project and we evaluate it and we write about it, then we look for more funding, and we can do all that because we don't have to worry about our monthly salaries.... that is I think the tension of CreaTures as well because all the researchers are coming from a very different economic model... I don't think we can really truly discuss the nature of creative practice until we truly discuss the economic model that supports these practices”. – Anab Jain, March 2022

Project iterations then, are not necessarily driven by creative desires, but are also influenced by the pragmatic assembly of pots of funding. These are the situations in which strategies take shape – over the longer term, in iterations that leverage the short-term pots of funding that are available, balancing core interests in learning and creating new work, and the imperative of winning grants or commercial contracts in uncertainty.

Section 7: Detailed case mapping

This section focusses on the very detailed data analysis that gave rise to the 25 strategies. Following the same processes as in the Topics section, we put summaries of the key insights from each case (as determined by the researcher from looking at the documentation) onto digital sticky notes and clustered these following Braun and Clarke (2009), using the online platform Miro (view the Miro board [here](#)⁷). We present an overview of the key clusters with summaries of at least one example case from each; a final table of strategies is presented in Section 8.

1. The design of processes that bring people together across difference

When the strategies from each case were clustered, we found that an important thread was creative practice as a means of mediation between different groups, including interdisciplinary mediation. Many teams designed processes for bringing people together, whether crafting a powerful invitation to those not normally included in creative activities, or forging long-lasting interpersonal networks across disciplines.

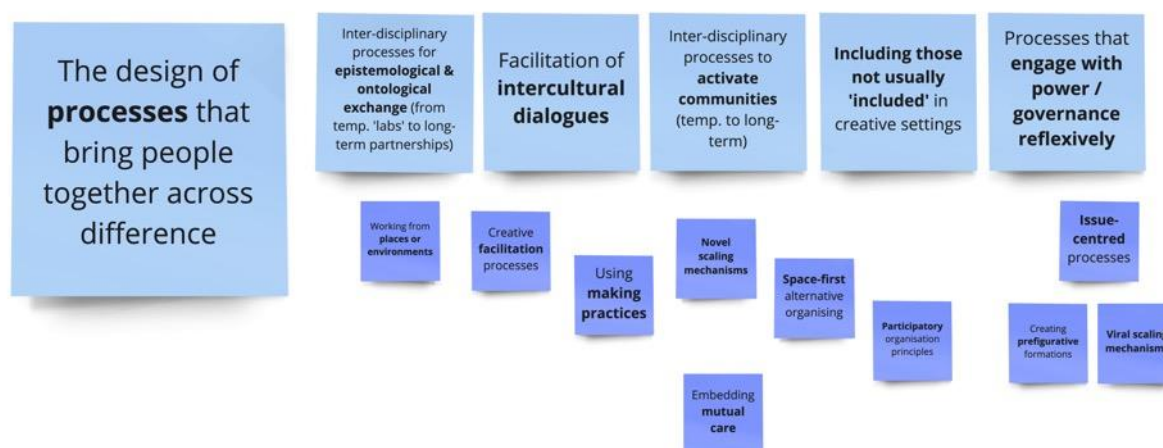


Figure 18: Process design cluster

This cases cluster included five **types of process**:

- **Interdisciplinary processes for epistemological and ontological exchange**

This cluster on interdisciplinary processes for exchange featured a range of cases that enabled the co-mingling of artists and scientists.

Some emerged from creative practice, for example the CreaTures ExP **Baltic Sea Lab** assembled an interdisciplinary group around algae and seaweed and had a shared field trip which featured scientific talks and experimentation with creative eco-rituals.

This cluster featured established organisations **Estudio Nuboso** and **Cape Farewell**, who organise regular residencies, cross-sectoral encounters, workshops, publications, network-building, on the topics of Panamanian rainforest preservation and climate change respectively.

- **Facilitation of intercultural dialogues**

Experimental encounters through shared creative working can be a strategy for exploring intercultural difference in places where worldviews and ways of life are dramatically different.

El Cuenco de Cera is an NGO that runs a programme of intergenerational and intercultural encounters. They have facilitated inclusive knowledge exchanges between artists, researchers and local communities for 10 years, in ways that highlight indigenous ecological knowledges gained along the Amazon's Pirá Paraná River.

- **Interdisciplinary processes to activate communities**

Creative practitioners can be part of wider, multi-disciplinary groups that take a community-first perspective, where creatives work with community groups to co-shape action.

Lán Thíde is a Climate Beacon project in the Outer Hebrides that brings together arts, culture, heritage, environment and community organisations, focussing on community experiences of climate impacts, contributing to regional processes of adaptation planning.

Citizen Sense is interdisciplinary research that engages in experimental, participatory design processes – working with communities who already sense their environments as part of environmental campaigns to understand how low-cost digital sensors can be used to extend these practices. Emerging from the past seven years of embedded research and design is a suite of open access tools called AirKit, used by interested individuals and communities to monitor 'particulate matter' (small particles in the air that are increasingly known to be damaging to health) – and also to analyse and create 'data stories' from the monitoring data.

- **Including those not usually 'included' in creative settings**

Being included has multiple meanings here: firstly, the ways that creative and scientific institutions invite local communities within which they are embedded (especially reaching those that do not usually visit galleries).

A set of cases focusses on how creative practices can include marginalised people into social networks. **Homelike** and **Free to Feed** both used food to anchor vulnerable people into communities (and ideally into employment; drawing on the skilful sensory and care-filled rituals of cooking for one another).

Van Gogh Connects brings in young people as 'connectors' to explore areas of social concerns and / or benefit, including problematic histories of colonisation in the museum, providing resources for open processes of enquiry partly steered by the young people themselves.

- **Processes that engage with power / governance reflexively**

Projects that set out to use creative projects to intervene reflexively in governance processes on the use of space and on energy transitions, making clear the more informal processes of governance as well as the outcomes.

In its Netherlands-based iteration, the project **White Paper** staged participatory, interdisciplinary dialogues to produce an alternative legal convention (the Convention on the Use of Space) that asserted the value of 'non-marketable, 'social' uses of space as being productive, called a 'movement-perspective legislation' (Dadusc 2019).

The project **2050: An energetic odyssey** subverts the idea of 'soft spaces' (where decisions are taken in elite social contexts), engaging in a dramaturgical staging of an energy future, including interactions between key stakeholders in the process.

Related **strategies** were used by creative practitioners:

- **Introducing making practices**

Many of the cases used hands-on material making to facilitate dialogues and processes of exchange.

Hackteria is a group that organises bioart projects – they involve open-ended, tinkering together with living materials – a highly experimental mode of being/doing that is not necessarily oriented towards a specific outcome, beyond the production of open source documentation of the process (part of the aesthetics of the process).

Los Tiempos De La Escucha was an online exhibition that documented a research-led project that created 'mingas' or making-spaces with women's textile collectives exploring the idea of reconciliation in post-conflict areas. These created textile atmospheres of making, listening and remembrance (the full project is called **Remendar Lo Nuevo**).

- **Working from places or environments**

Working from places or environments is a common strategy for many of the cases, where the specific qualities and needs of a place are prioritised in an emergent process of building capacities using participatory and inclusive arts-led approaches.

The Stove Network is an example of an organisation that began by using creative strategies for regeneration in Dumfries, Scotland (UK). Stove used participatory events to engage townspeople in imagining futures for the town centre, creating a community-led vision for regeneration, as well as platforming the arts through a range of festivals and events. Stove followed an emergent process of co-creation with the town, building capacity in the town and its organisation, eventually leading to a plan to regenerate a section of the high street called Midsteeple Quarter. It is now the only arts-led development trust in Scotland.

Likewise, **Nutrire Milano** aimed to create new, local food chains around Milan, reducing food miles by bringing locally grown food into the city centre. The project featured design-led experiments that more deliberately connected producers and consumers using participatory processes that started from place, allowing for testing and experiments with new food chain designs that also radically reshaped city spaces, such as the revitalisation of outdoor markets.

- **Space-first alternative organising**

Other projects acquired spaces for production, letting forms of organisation and programmes of creative work emerge from those specific sites, often experimenting with alternative modes of organisation, such as commoning.

Calafou is now a radical ecological hacktivist commune based in a former industrial colony of 'deteriorated land' in Spain, consisting of 28,000 m² among which there are industrial buildings, green spaces and a block of 27 houses, which has also provided space and resources for prominent hacktivist projects.

ONCA is a UK-based arts charity focussed on social and environmental issues, with a space-led approach including a Gallery space, floating Barge and workspaces.

- **Embedding mutual care**

Many strategies focus on embedding mutual care in process designs. Care emerged as a sub-topic in our previous analysis, and these projects operationalise care ethics in interpersonal relations.

Constant has produced a set of social and technical collaboration guidelines that explain how to act sensitively and equitably towards one another in shared creative exploration.

The **Barcelona Creative Commons Film Festival** provides convivial group spaces for meeting others, making connections between invited filmmakers and their peers.

- **Viral mechanisms**

A pair of projects explores the use of viral scaling mechanisms that embed the reproduction of the project inside the process design, which we have chosen to highlight due to the novelty of these decentralised modes of dissemination.

The Hologram offers a peer-to-peer support system where emotional, social, and physical wellbeing is cultivated in an ever-reproducing viral triangles of care (more on this in the Hologram case study in D2.3). By enlisting people to act as a triangle, each building their own subsequent triangle of care, a whole new health system is anticipated.

Won't fly for art started out as promoting the specific action of flying less. The Co-Directors of the Furtherfield Gallery made a pledge, using the Pledgebank platform, to tell others that they were not going to fly for art for 6 months, inviting others to make the same pledge. 26 artists undertook the pledge, but, more broadly, the project generated debate about the role of individual artists and organisations in contributing to climate emissions across different arts communities, responding to the public nature of the pledge and the invitation to join.

- **Creating prefigurative formations**

Prefiguration is a mode of organising that aims to model and embed the desired change state in all of the everyday actions taken on the journey towards a central goal.

Feral Trade is an experimental arts project that has been trading goods through social interconnections (passing from friends to friends all around the globe): a commentary but also a living alternative to commodity chains.

The Bank Job explores the issue of consumer debt and post-capitalist communitarism, building an alternative bank and literally exploding £1.2 million of local debt (which is captured in a film).

- **Participatory organisational principles**

Another cluster refers to a collection of well-known process principles for organisational change. This category represents strategies that have had widespread adoption elsewhere, drawn from organisational change but adapted/integrated to support eco-social transformation.

The **Agile** method for software development is a way of managing complex projects, that involves regular, effective communication on the completion of project steps.

Beyond Budgeting principles aim to move away from budgets as fixed artefacts, and towards processes for checking in on wider organisational goals.

2. Creating new stories for better futures



Figure 19: Creating new stories cluster

This cluster includes cases that have produced new stories for better futures. We identified two broad approaches: firstly, cases that used immersive worldbuilding techniques – in short, making the idea that ‘other worlds are possible’ more tangible and embodied, through a range of experiential and dialogic practices. A second set of cases involved more explicitly future-oriented practices, where audiences are asked to make an imaginative leap into a specific future scenario, which is then used to provoke reflection on sustainability concerns in the present day (gathered under the more general grouping ‘A futures focus’).

The following **strategies** used by creative practitioners in this case cluster include:

- **Challenging frames and metaphors**

Several projects challenged existing (unsustainable) frames and metaphors.

The **Dark Mountain** collective are pioneers of the 'radical hope' strand of sustainability politics, which argues that system-level transformation can only occur through opting out of the structures and practices of an unravelling world. This happens by inviting people to let go of familiar and comforting stories, those that obscure the true extent of climate and biodiversity collapse; only through the unravelling of these congealed narratives can new stories be told that can help us to move forward. The practice works on two levels: suggesting profound alternatives are possible, through unseating existing normative tales, and helping propose what new ones might be, with fiction, festivals and other myth-making devices to change cultures.

Working at a more localised scale, the **Fallen Clouds** ExP has taken on one specific metaphor – the ‘cloud’ in ‘cloud computing’. This group of filmmakers has followed community resistance to a planned data centre in Chile that would drain a community’s aquifer in an area of high water stress – telling a story that radically re-materialises the environmental impacts of the cloud.

- **Worldbuilding imaginaries through texts**

Fiction writers have increasingly answered the call (e.g. made by Amitav Ghosh in **The Great Derangement**, 2016) to create climate fictions (sometimes known as ‘cli-fi’) and this has garnered public and critical attention (Johns-Putra 2016). Cli-fi novels dramatize climate impacts through the creation of detailed, fictional worlds that readers can become immersed in.

Flight Behaviour is a 2013 novel by Barbara Kingsolver that uses the phenomenon of the Monarch butterfly's migration to explore the wider, systemic changes brought about by a warming climate. The characters bring to life complex dynamics of knowing and acting on climate change through the focus on relations between a local farmer, incoming scientist, the local community and media news. Manjana Milkoreit argues that worlds built through such texts may be ‘socio-climactic imaginaries’; collectively-held vision of futures. Their authors demonstrate ‘structural-ideational power’ by creating new ideas of the future and intervening in climate-related politics (Milkoreit 2017, 14).

- **Creating speculative artefacts and environments**

Several cases involve the creation of speculative artefacts and installations, which (in the case of environments) create multi-sensory experiences of alternative futures.

Sensing Energy was an interdisciplinary research project that produced speculative designs relating to energy use and, in a series of participatory workshops, gathered a set of stories and responses to the prototypes.

In the ExP installation **Invocation for Hope**, audiences are invited to travel through a grid of burnt and blackened pines towards a resurgent living forest at its centre, where multiple species living in harmony with humanity promise of a new way of living. This installation presents the scenario of a post-anthropocentric planet in which humanity is just one part of a dynamic and multifaceted ecosystem - an example of how these material speculations (Wakkary et al. 2015) can work on many levels to engage audiences.

- **Experiences of future sustainable worlds**

Several projects invite audiences to step into highly detailed immersive future scenarios, and to reflect from a ‘defamiliarized’ standpoint on how this future was achieved.

In the case of **Carbon Ruins** (a part of the Climaginaires project), visitors were invited to enter the year 2053, and from there, to look back on a fossil fuel transition that has already happened. Visitors encountered a history of the transition on a large visual timeline, and ‘obsolete’ objects from the carbon-intensive past; creating a ‘sensory and conceptual immersion by which the participant becomes mentally and emotionally involved’ (Stripple, Nikoleris, and Hildingsson 2021, 93). Stripple et al. identify this as the design technique of ‘defamiliarization’, arguing that it provokes imagination and critical self-reflection in audiences; in some cases moving people from passive urgency to active hope, or from resignation to determination (Stripple, Nikoleris, and Hildingsson 2021, 96).

Also from the Climaginaires project, **Memories of the Transition** is a place-based sonic experience that takes a similar defamiliarization approach, suggesting a transition has already been achieved.

- **Playful and critical game-like formats**

Many projects draw on playful game-like formats that enabled players to experience and to control a phenomenon for themselves as a way to engender critique.

Some follow well-known gaming formats, such as **Fate of the World**, a global strategy game that uses data from recent climate models and asks players to address the challenges of balancing human needs with the preservation of ecological systems and sustainable resource use.

Other projects involve the design of game-like protocols, such as **Loophole for all**, where artist Paolo Cirio shows people how to avoid tax, using certificates from Cayman Island companies that he scraped from the Cayman Islands Company Register. Here, the environmental aspects are less obvious, but both the reduction of the Cayman Islands to a tax haven in public consciousness and the act of avoiding contributions to the public purse are revealed as part of a neoliberal political system that plunders rather than regenerates.

3. Processes that explore relations between humans and other life-forms

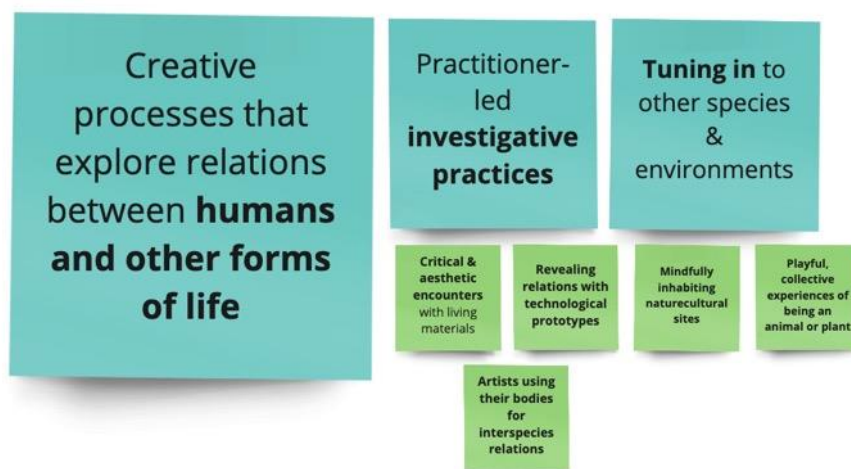


Figure 20: Cluster on human and other forms of life

This cluster of examples in the Observatory focusses on the relations between humans and other 'forms of life' (from cells, through animals and plants, to whole ecosystems such as forests). We identified two broad approaches:

- practitioners conducting investigative processes – often drawing on laboratory protocols common to technoscience for the artistic exploration of living materials;
- cases seeking new ways of 'tuning in' to other species and environments (i.e. becoming aware of these relations and making them visible), which involved both artist-centred and more participatory practices.

Our analysis of a range of cases with this theme reveals that the following **designed strategies** are being used by creative practitioners:

- **Critical and aesthetic encounters with living materials**

These cases all involve artists undertaking processes of enquiry with other living materials. The processes are the artworks, and they open up new avenues for critique about current unsustainable conditions and, in particular, destabilise the central figure of the human.

In the **Cyano Automaton** ExP, a spirulina bioreactor was monitored using sensors, and the resulting data flow was combined with NASA budgets, data from global gold mining and the resulting carbon dioxide emissions; creating a critical data story of human exploitation and colonisation.

Similar themes appear in **Drosophila Titanus**, where experiments were staged to try to select the 'perfect' candidate flies to breed into a species that could live on Saturn's moon Titan. Since the *Drosophila* fly is 95% genetically similar to humans, it has been used as a

'model organism' in scientific experiments on space travel (having been sent into space in 1947), raising questions about environmental adaptation and the role scientific practices in human imaginaries of space colonisation.

- **Revealing relations with technological prototypes**

Several cases use technological apparatus to foreground the being of plants by setting up hybrid experiments that audiences can interact with.

Confronting Vegetal Otherness stages a series of works to confront this 'othering' - for example, bringing together a Chlorella and a carcinoma cell. Setting up encounters in the lab and the gallery between humans and plants produces meditations about the relationships between them and attempts to open up the specific being of the vegetal.

Likewise, the **Junior Returns** artwork is a hydroponic environment for a broccoli plant. The apparatus keeps the plant alive, but only just; it does not supply sufficient nutrients for the plant to thrive.

- **Artists using their bodies for interspecies relations**

In several cases, artists used their bodies to nurture interspecies relations, going through a process that then is shared with other audiences through documentation and testimony.

In **K-9 topology**, Maja Smrekar explored the co-evolution of humans, dogs and wolves; for example breastfeeding a puppy in a familial setting with her dog, and transforming serotonin from her and her dog into a fragrance.

In **May the Horse Live Within Me**, artist Marion Laval-Jeantet is injected with horse blood (modified to decrease the possibility of immune reactivity). Both of these cases in the corpus make interspecies relations visible, at the same time challenging norms – particularly around interspecies intimacy – and using affective means to attract (media) attention to the questioning of relations.

- **Mindfully inhabiting naturecultural sites**

Mindfulness is the technique of bringing one's attention to experiences of bodily sensation in the present moment. In this cluster of cases, participants mindfully bring their attention to their own bodies and then outwards to other lifeforms around them.

In **Yarmouth Springs Eternal**, this means walking together, and finding, identifying and appreciating urban lifeforms (particularly plants) in the spaces of the city.

In **Open Forest**, physical (and virtual) walks guide participants through the instrumented Hyttiälä forestry field station in Finland (amongst others). The group uses the sharing and collection of stories as a way of making visible both the sensing and measuring of trees performed as part of scientific enquiry and other forms of affective sensing and attuning brought by humans, and dogs. Affect here refers not simply to individual emotion, but, as Latimer and Miele put it, "attachment" on the one hand, and being "moved" on the other' (Latimer and Miele 2013, 8). Mindful methods of ecological interconnection have been used extensively within ecofeminist movements, most notably in the work of Joanna Macy and collaborators (e.g. Macy and Young Brown 2014).

- **Playful, collective experience of being an animal or plant**

Roleplaying an animal or plant is often combined with mindful exercises described above to create playful settings that involve improvisation, as people decentre their selves and attempt to speak for an imagined other, building empathy and intimacy.

Projects like the **Treaty of Finsbury Park 2025** and the **Experimental Multispecies Co-Design Approach** involve groups of people taking on the character of an animal or a plant and speaking as or for them – developing greater understanding and empathy for other species. And, as we argue in the extended study of *Treaty* below, also enjoying playing alongside each other.

4. Organisational Formats



Figure 21: Organisational formats cluster

A number of cases referred to organisations with significant eco-social aims who were particularly innovative in their approaches.

- **Governance and accountability structures for human activities and environments**

These cases focussed on organisational structures and practices that use existing accountability regimes (legal frameworks, legal cases) to attempt to disrupt extractive and environmentally degrading actions, and to promote regenerative modes of organising.

Forensic Architecture and **Zoöp** used creative methods to develop accountability processes for human activity in environments. The Zoöp project came out of a series of speculative arts-led workshops, beginning life in 2018 as a vision for a co-operative legal structure where other species could be respectfully included in (human-led) governance processes. Using elements of Dutch law, a legal structure for ‘zoöperation’ has now been created. In short, multispecies interests are represented within a zoöp through the creation of a Zoöconomic Foundation that must consider the impacts of land use on all of the land’s inhabitants.

Forensic Architecture is an agency that investigates human and environmental rights violations, using creative methods (including 3D architectural modelling, motion design, and machine learning) to generate forms of evidence for accountability processes. They show their work in creative and cultural spaces, developing the notion of ‘investigative aesthetics’ (Fuller and Weizman 2021).

- **Multiple modes of production**

These organisations combined and layered different modes of creative, community and environmental modes of production – resulting in extremely rich, multi-faceted cases that

attracted diverse audiences. People who may not have been attracted to creative activities experienced them as part of a wider set of community-driven pursuits.

Fallen Fruit maps existing fruit trees while planting new orchards alongside communities and documenting cultural and historic relationships with fruiting plants. The project activates communities, who come together to plant the trees (sometimes networking community, cultural and governmental actors). The fruit trees themselves are a common resource, providing shade, fruit to eat, benefits for pollinators and for soils.

Company Drinks began as a heritage project – a series of walks that recreated women's labour migration from London to Essex to pick hops. Participants in the walks began gleaning, and from this the group made connections with local brewers to make community drinks. These are branded by the participants and sold at art fairs using a dual economy, e.g. the drinks are £1 in London and £3.50 at Frieze Art Fair. The organisation has a community space in Dagenham where they also run a range of workshops that focus on plants (foraging, dyeing, picking and crafting).

- **Developing and platforming eco-social work**

This cluster contains several examples of organisations that develop and platform eco-social work as a central dimension of their practice, making space for works that might not find homes in other institutions, or be funded by the art market.

IMPAKT is a long-running Netherlands-based organisation with a gallery space and yearly festival, which, in recent years, has acted as an experimental platform for creative practitioners interested in making work with environmental interconnections. Many organisations have increasingly begun to platform creative works that take a sustainability-related focus (perhaps most identifying under the broad grouping of environmental humanities, rather than 'sustainability' per se).

5. Translators



Figure 22: Translators from creative practice to other sectors

The cluster 'translators' refers to cases that promote communication across disciplines, including science and policy.

- **Translations between policy and practice**

This range of cases facilitate the traffic and translation of creative or community-led practices into policy realms by creating processes or artefacts that welcome different modes

of knowledge production, and make an effort to be legible across communities for the purposes of promoting collective action.

The Seeds of Good Anthropocenes project crowdsourced projects in sustainable transformation that offered alternative possibilities for 'good' futures. In addition to maintaining the repository of 'seeds' as inspiration, the project team selected aspects of these empirical examples to develop complex and engaging scenarios that were closely connected to emerging practice.

Creative Carbon Scotland is a knowledge-broker between creative practice and policy sectors, running an 'embedded artists' programme. They help partners to embed creative practitioners in interdisciplinary, participatory or community-focussed programmes for addressing environmental change. Their projects build new forms of interdisciplinary practice, achieving outcomes in climate readiness and adaptation (particularly around place).

- **New frames into institutions**

In addition to the more general category of translation, key organisations also more specifically help to seed new frames into institutions, meaning creating specific articulations of what the challenge is, and how creatives could respond.

Happy Museum is a project that helps museums develop approaches to sustainability and wellbeing; supporting museums, firstly, to prioritise action on sustainability, and, secondly, advancing a frame for the purpose of museums 'steward[s] of people, place and planet, supporting institutional and community resilience in the face of global financial and environmental challenges' (Happy Museum, n.d.).

6. Resources



Figure 23: Resources cluster

- **Resources for eco-social practitioners**

The gathering together of resources involves providing practical and inspirational resources for creative practitioners (and others, such as sustainability researchers and policy-makers). These actions contribute to platforming a community and disseminating key methods and findings.

The UK-based organisation **Julie's Bicycle** provides tools for creative practitioners to reduce their carbon footprint and holds sector-level conversations about sustainability.

The **Re-Imaginary** project has gathered an extensive collection of participatory methods for creative group activities that are well-described and accessible, along with research publications that set these methods into context. There is a particular focus on creative methods that connect people to other life-forms.

7. Pedagogy



Figure 24: Pedagogy cluster

- **Transformative pedagogy**

Refers to cases that re-make sustainability education in radical ways, centrally involving creative practice to use aesthetic practices to investigate a phenomenon and also to present the outcomes of a shared learning process.

The **Museum of the Linear Economy** was an exhibition produced at the end of a two-month 'mixed classroom' course of the Urban Futures Studio. It involves students, instructors and policymakers learning together using creative practices to produce a tangible or visual outcome, building networks between policymakers and the university. This strand of futuring research acknowledges the significance of both the content of the vision itself and the process of creating and experiencing it, aiming for rich, experiential modes of interaction throughout.

The **Anthropocene Curriculum** is a network of practitioners who are exploring alternative modes of pedagogy that involves transdisciplinary co-learning and co-production. Coming from the environmental humanities, this project argues socio-ecological transformation can proceed through critical education of/about contested territories of the Anthropocene.

8. Friendships



Figure 25: Friendships cluster

- **Transformative friendship**

Recognises that friends or colleagues can be influential and formalises that strategy as the critical friendship needed for both stimulation and support.

Felipe Gonzalez Gil from ZEMOS98 and **Maria Ptqk** demonstrate this. She introduced new topics (feminist economics and environmental humanities) that became important in ZEMO98's developing practice.

9. Looking back in time



Figure 26: Looking back cluster

- **Looking back in time to discern transformative change**

This cluster recognises how difficult it is to discern transformation as it unfolds contemporaneously, and how looking back in time may be the only way that large-scale change can be recognised.

In the case of **Return to Escape from Woomera**, this involved re-staging a (serious) video game about asylum detention (as a live performance event) sixteen years after its original release, to hold a conversation about how little had been transformed.

We turn now, to understand how these strategies have been operationalised (sometimes together) in an extended case study on the *Treaty of Finsbury Park 2025*. This also allows us to demonstrate the iterative character of creative enquiry. Following the case, we return to the final list of strategies and set them into a wider context.

Section 8: Delving deeper into an extended case study

The Treaty of Finsbury Park, 2025



Figure 27: A photograph of role-players in Finsbury Park, January 2022

“At the project’s core is a provocation: humans live in highly curated isolation, alienated from a planet teeming with life, by the imperialist systems of domination that we have created to control it. Rather than nurturing kinship with the vibrant ecologies of creatures in our own world, we try to cure this loneliness by seeking companionship from our machines or look far beyond our own realms for signs of life. Drawing on this premise, the project is exploring new ways to build empathy pathways to non-human lifeforms through play.” Treaty Documentation

Background:

The Treaty of Finsbury Park 2025 is a series of live action roleplay (LARP) sessions created by Ruth Catlow from Furtherfield, with Cade Diehm from the New Design Congress. Furtherfield are one of the longest-running CreaTures creative partners; since 1996 they have been exploring the intersection of art and technology, with a particular focus on networked and decentralized arts practice and increasing interest in how this relates to climate collapse and other ways of living. They have always maintained both a physical gallery space and a substantial online presence. Currently they run a Gallery and a Commons space in Finsbury Park, London (UK).

Finsbury Park is one of the great parks of the Victorian era, dating from 1869. It is situated in a densely populated and ‘superdiverse’ area in North London, where over 100 languages are spoken, and there are high levels of inequality⁸. Like many urban parks it faces both social and environmental challenges, from poor air quality and noise pollution to struggles over governance and financial sustainability. These impact all park users – including humans but also the many other species that make their homes in and around the park.

The *Treaty* roleplays were developed to bring the needs of animals, plants, fungi and microscopic living things into conversations about the organisation of Finsbury Park using “Interspecies Assemblies”, which, by extension, could inform on the design and running of other urban green spaces. During *Treaty* events people are asked to put on a physical or digital mask and to roleplay the character of an animal or plant resident of Finsbury Park.

The characters are: goose, dog, squirrel, beetle, grass, tree and bee, which represent all species found in the space.

Players improvise around a near-future fiction in which there has been unrest among all the species inhabiting Finsbury Park.

“After much protest it has been agreed that a treaty of cooperation will be drawn up. But first there will be an Interspecies Festival to ensure all the species understand each other’s cultures and needs. Like a World Fair or an Olympic Games, the Interspecies Festival of Finsbury Park will share and showcase the assets and aptitudes of each species community. It will be a place of discovery, thrills, marvels and broadened horizons! However, it can only be planned and delivered if humans help all the species of the park to communicate their ideas.” – Project documentation

They hold a series of conversations about the organisation of the world’s first interspecies festival to be held in Finsbury Park (staying in character throughout), and how their species are impacted. The artwork plays with emerging experiments in interspecies democracy, asking: what would it mean to ascribe citizenship and equal rights for all living beings to organise and shape the environments and cultures they inhabit? Thus, role-players are invited to re-imagine how to organise the park’s governance for the shared benefit of all the park’s inhabitants, and users and in the interest of the park’s biodiversity.

What happens at an Interspecies Assembly?

Owing to COVID-19 restrictions, two different formats of Interspecies Assemblies were designed:

1. online events held using the videoconferencing platform Zoom that are open to anyone anywhere, and
2. in-person gatherings specific to Finsbury Park.

These two formats help Furtherfield to reach their two main audiences: an international arts and technology community that they have been linked into since their founding, and people local to Finsbury Park.

1. Online

Online players are invited through a series of emails to visit the Sentience Dial for 'Mentor Species' matching. This determines which species they will play and helps them to get into character. People are then provided with a choice of mask showing a graphical illustration of their character. They can wear either a cardboard mask or a digital animated filter to their video stream when entering the Zoom room, meaning that other people see their character’s mask instead of their face. Players then begin acting in their character, moving and speaking as a squirrel, for example. They are led through a group discussion about the organisation of the park, with each player speaking both as and for their species and for the group of other species they represent. The bees for instance, represent the pollinators, airborne insects, wasps and butterflies of Finsbury Park, while the grass represents all small plants, herbs and fungi. At each of the Assemblies, players discuss (virtually) different park locations and potential activities for the festival.

2. In-person

During in-person events a similar process takes place. Humans meet in Finsbury Park and are briefed on the game. They then visit the Sentience Dial – a fictional device for enabling cross-species communication – inside the Gallery, where they are given a printed mask of their new character (see the image above). Players then speak and act in character, similarly to the online events, though embodied in-person communication presents richer opportunities for role-playing animal or plant behaviour. The masked players then go on a walk across the park to visit three habitats where players discuss the relationships between

their characters and in each habitat's ecology, highlighting both harmonious and problematic relationships.

In both formats, after the roleplay has finished, players remove their masks and come out of character, for a 'debriefing' discussion, which prompts collective reflection on the experience and draws out key points of learning, as happens in many 'serious games' (Crookall 2010). As discussed, this point of reflection is critical to making the experience of play memorable and has been shown to change the effectiveness of participation towards new understandings of relations (Light and Welch 2018).

Transformative goals:

The *Treaty* project recognises that current ways of life in the Global North are a driver of biodiversity loss. Indeed, it aims to make visible the logics of those relationships, where anthropocentrism (the lived reality of one species being considered profoundly more important than those of others) is causing direct harm to other species. The project asks people to encounter these relational dynamics through roleplay (a playful encounter), using familiar ideas of 'rights' – and asking people what might change if these were extended to other beings (the strategy **Playful, collective experiences of being an animal or plant**, as well as 'meta' strategies of **reflection, imagination and anticipation**).

The experiences of playing in the park as a different species brings to the foreground the designed quality of urban green spaces as 'naturecultural' spaces, where biophysical relations and human social formations are profoundly intertwined (Haraway 2003). Through the experience of acting as a plant or animal character, players are intended to build what Catlow calls "empathy pathways" to other beings. In the process, they will learn more about the everyday lives of the park's other inhabitants and the impacts that they have on each other. The experience is intended to be fun and playful, to allow for unexpected things to happen. This open styling might be contrasted to an information-based approach that hinges on raising awareness of specific facts (though information about species and their habitats is provided and the Finsbury Park ranger, who is an ecologist, was closely involved in designing the materials).

ExPs as multi-year, iterative processes

Like most of the other ExP cases, the *Treaty* project was part of a much longer process of enquiry that precedes CreaTures and will continue beyond it. Other projects centrally informed the design of *Treaty*, including earlier ecologically driven LARPs, and Furtherfield has made concrete plans to extend the programme of activities to 2023 (and draft plans to extend *Treaty* activities to 2025). In other words, the materials being used for *Treaty* are new, but their design into a playful format is familiar and has proved successful in other contexts. Similarly, the Furtherfield Gallery is practiced at mounting hybrid events, featuring local and remote access. The themes can be seen to run through recent work of several years, while the overall commitment of changing people's understanding of relations is central to all Furtherfield's work and can be traced as it develops and becomes more confident over 26 years. Furtherfield co-director Ruth Catlow, who leads *Treaty* work, keeps extensive notes of plans and enactments and talks of the design process of achieving the effects she anticipates. It is evident that work is pulled from many earlier achievements and fed forward to newly relevant applications (see more below). We explore key moments in the history of *Treaty*, in order to draw these patterns out further.

A brief history of *Treaty*

Within CreaTures, we developed several practical methods for looking beyond project-specific framings when working with creative practitioners on ExPs. The Dimensions of

Value interview protocol (detailed fully in D2.4), developed by the Evaluation team in Work Package 4, asks practitioners, first, to look back on the history of their project (including prior iterations and influences) and, second, to imagine an idealised future for the ExP. This timeline of Furtherfield's developing interest in roleplaying for interspecies democracy is summarised from two Dimensions of Value interview transcripts and accompanying visual notes (held on the digital platform Miro), which we used to pull out these key moments.

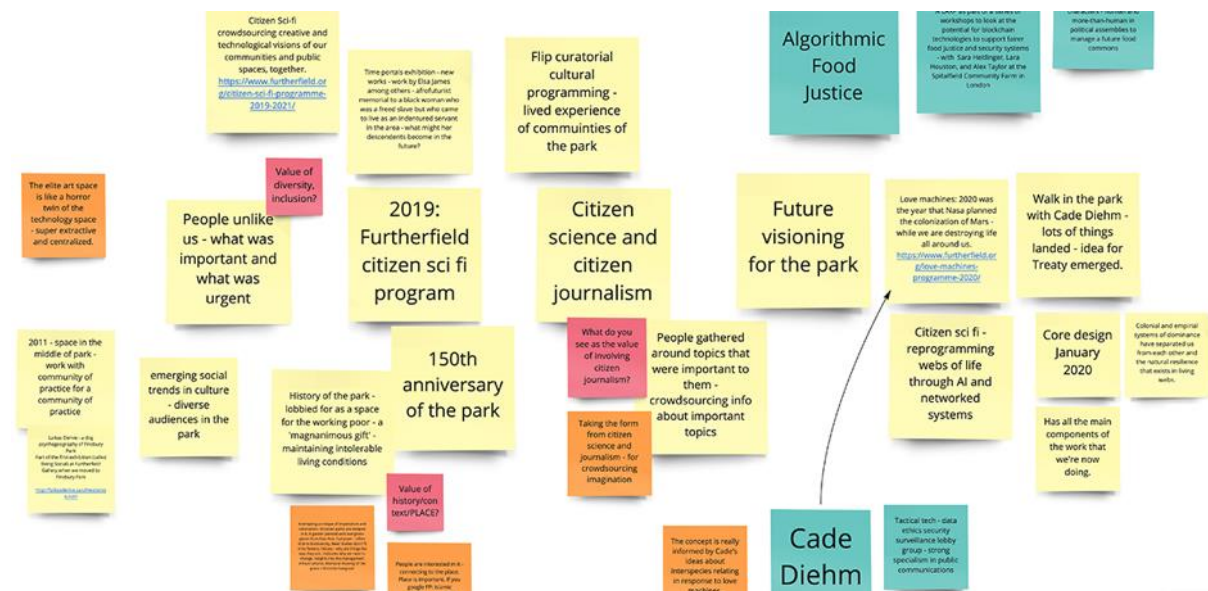


Figure 28: An extract from the Dimensions of Value visual notations

2012 onwards – Furtherfield's Move to Finsbury Park

Furtherfield began to weave their practice into an urban, public green space and work with emerging social trends reflecting the diverse cultural audiences in the park.

- This marks a shift in their context towards programming to connect to green space issues (and connects to the strategy **Working from places or environments**)

2012 – Programming [Laika's Derive](#), a dog psychogeography of Finsbury Park

Sarah Waterson augmented North London dogs with GPS-enabled photography rigs. She combined these digital traces with participant narratives onto a mapping platform to form a collaborative mapping.

- This experience of programming multispecies art was an influence on Ruth Catlow's thinking.

2018 – What Will It Be Like When We Buy An Island (on the blockchain)?

This LARP, co-devised by Ed Fornieles, Ruth Catlow and Ben Vickers, was about crypto billionaires buying a series of islands and setting up new communities. The roleplays explored the islands' governance boards after 1 year and 50 years to see how their communities developed.

- This was an experiment in live action role-play, using the format of assembling a board. It included gathering feedback from participants, the production of a series of fictional news items reporting on developments in each island, discussions with other participants and a write-up in the online art list / blog Rhizome.

2019-2021 – Devising the [Citizen Sci-Fi](#) programme

This 3-year programme drew on citizen science and citizen journalism to mobilise public participation in different processes to imagine new visions and models of stewardship for public, green space.

- This programme was an important context for Treaty.

2019 – Algorithmic Food Justice live action role-play

As part of a short research project on algorithmic food and justice, Catlow developed a LARP that drew on the Assemblies format of the previous blockchain roleplay. Each Assembly member had a ‘companion species’ that they had to represent within the game.

- *This project generated shared reflection and writing with co-authors on how to platform animal and plant voices in live action role-play, in the form of several academic publications.*

2019 onwards – Meeting in Finsbury Park: Ruth Catlow and Cade Diehm

Ruth Catlow and Cade Diehm met in person to think together about multi-species relations through the lens of colonialism. Logics of domination were connected by Diehm into concerns about technology ethics and privacy, especially in digitally-mediated experiences during pandemic lockdowns.

- *This meeting galvanised a collaboration.*

2019 onwards – Ruth Catlow’s engagement with critical animal studies scholarship

Sue Donaldson’s writings about multi-species democracy and Lauren Corman’s on interspecies subjectivity were particularly influential for Catlow in thinking about how different species communicate with each other through their bodies and how this acts as a challenge to democracy.

- *This thinking influenced the design of Treaty.*

Meeting Ricard, the Park Ranger at Finsbury Park

- *This meeting was significant in learning about Finsbury Park’s different habitats, and the varying levels of biodiversity they offer (e.g. grass as monoculture), and coming to understand some of the ecologies at work in the park.*

Early 2020 – Transcultural Data Pact online roleplays

Again, working with researchers, Catlow devised a series ofLARPs on personal and collective data gathering practices. These were the first to take place online (rather than in person) due to COVID-19 lockdowns.

- *Catlow articulated her specific approach to role play as LAARRPing (Live Art Action Research Role Play) in writing and talks, and worked with other researchers to develop a set of ethical principles for online LAARRPs.*
- *This project generated extensive feedback from players (and some controversy) and helped Catlow to understand how LAARRPs work differently online.*
- *Multiple pieces of co-authored reflective writing on live action role-playing for research were produced during this project.*

CreaTures researchers start to attend, monitor and discuss outcomes at this point.

June 2021 – Treaty pilot

A test event online with a group of students and early career researchers who gave feedback.

- *This generated significant insights about the interactional and technical design of the event that resulted in a slightly different staging. It also highlighted perceived political tensions in placing questions of social justice for humans and other-species in dialogue with each other. This reinforced a decision to shift the framing of the assemblies from fraught political debate to celebratory festival design.*

October 2021 – The first online Interspecies Assembly

This online Interspecies Assembly was organised with seven invited guests (a total of 9 players), either connected with Finsbury Park, or with live action role-playing (including other artists and researchers). It was recorded and shown at the [IAM Festival](#), an annual gathering for creative practitioners and others to envision sustainable futures for digital, networked technologies.

- *This roleplay included a game debrief on the experiences of being in character, how it affected people's thinking more widely and what could be improved about the process.*

January 2022 – The first in-person Interspecies Assembly

Furtherfield made an open call for participants on their website, and 11 people attended and played (2 were facilitating).

- *This included a pre-game survey and a post-game debrief discussion asking about the experiences of being in character, how it affected people's thinking more widely and what could be improved about the process.*

May 2022 – Three further online Interspecies Assemblies

Furtherfield has open calls on their communication channels for three events.

- *Key aspects of the feedback from the October 2021 event were adopted to update and streamline the process design. For example Furtherfield has developed of a different process of 'onboarding' participants into the game, using a more visually rich webform, and incorporating more playful mini-exercises to better prompt roleplay during future events.*
- *They have also adopted a hybrid approach to masks to ensure that people experience deep immersion regardless of whether or not they are able to access the digital animated masks.*

What can we learn from this brief history of *Treaty*?

This timeline demonstrates more clearly the longer-term processes of enquiry that undergird the Treaty project. These are open processes of creation-in-motion. We can see how strategies are being continually refined by Catlow from one iteration to the next, as observation, reflection and feedback are folded back into the ongoing creation processes. We can discern an almost-recursive process whereby the feedback from one event transforms the next - for example Catlow's experimentation with live action role-playing moves across groups, from blockchain technologists (in *What Will It Be Like When We Buy An Island (on the blockchain)?*) and communities of urban growers and researchers (in *Algorithmic Food Justice*). The live action role-play work also spans media – Catlow has observed, reflected on, and re-designed these roleplay formats for in-person and online events. The outputs of these projects include pieces of writing that fully articulate in detail how these methods worked (or didn't) to move people, making otherwise tacit process design explicit to Catlow and her collaborators and shareable to other practitioners and researchers. (This making explicit, which comes partly from Catlow's note-keeping, but also from judicious involvement of research institutions by the artists, is an important strategy in itself since it enables both learning for the organisation and for other interested parties.)

Taking seriously the argument in D2.3 that creative practitioners seek to shift relations also means recognising creative practitioners as fully immersed in their productions. In *Treaty*, which has been shown as a project based around process design where in-detail interpersonal reactions matter, this means understanding Catlow as an experienced and knowledgeable practitioner, who is able to 'read' aspects of human behaviour to get a sense of how an ExP is working for an audience. For example, while playing as a dog in an Interspecies Assembly in Finsbury Park, Catlow is sensing and adjusting the ExP environment to work with people feeling uncomfortable in their bodies, or to fold lone players

into the game. These embodied, practice-based forms of reflection, learning and evaluation may be missed in project-based accounts, but they work to create a deep understanding of particular strategies; in this case the interactional qualities of giving people a collective experience tuning into an ecology.

Looking across the longer timespan presented here, we can see how much evaluation has been undertaken by the designers, drawing on Catlow's reflections and feedback from participants to become active learning. This presents itself as a strong knowledge base for understanding what kind of experiences that LARPs provide, including their newest 'interspecies' iterations. Seen this way, the strategy **'Playful, collective experiences of being an animal or plant'** has a substantial methodological heft and rigour that cannot be understood by looking at a single iteration.

Treaty's in-process outcomes:

It is difficult to convey in writing the opportunity for humorous play that Treaty roleplays present. Imagining yourself as a goose and making up goose-perspective dialogue on the spot as part of an immersive fiction is a highly active form of participation. It requires the speedy and immediate creation of storylines, and the imaginative use of voice or body to convey some aspect of animality or plantiness. (Recognising this, Catlow has provided the chance, at various points, to participate as a viewer, watching others improvising and reflecting together afterwards. For various reasons, she is progressing primarily with the participation route at present, but inviting multiples of each species to overcome performance pressure.)

A short snippet from the July 2021 online *Interspecies Assembly* gives a flavour:



Figure 29: Screenshots of Gus and Click in the online *Interspecies Assembly*

[Dry, the London Plane Tree asks: "How was your day?"]

Gus (the Canada Goose): "Well today I was finding a new place to poop. It was beautiful. This was the first one I've located in a very nice shady spot. I saw that the gullible humans were back again, and I put on my best performance – of course they were giving me so much food, thinking that I hadn't eaten for days! So much fun. I would love to hear from Click... I think I saw her when I was in the corner."

Click (the Stag Beetle): "Hi I'm Click, you wouldn't have seen me because I'm waaaaay underground eating decaying wood. And if you'd seen me, you might have eaten me, so I'm really glad you didn't see me. But I had a great day. Peaceful quiet with just my insect friends, my worm friends, and a bit of mycelium... mmm very, very nice."

Interspecies Assembly transcript, July, 2021.



Figure 30: In-person role-playing in Finsbury Park, January 2022

The debrief discussion of the in-person *Interspecies Assembly* in January 2022 gave important insights into how participants experienced the roleplay, which we summarise here. Players highlighted the importance of *playing*, meaning an activity that was fun but with no explicit productive output. Participant A commented:

“I didn't want to use my body in the roleplay at all...but I...had a lot of fun just chatting, and just making up some silly stories and then the humour... meant that I just felt that I was really taken away, just from my normal daily worries of things that, you know, that never seem to go away. I actually went away for a few hours of just playfulness, which I really appreciate.” – *Participant A*

Some members of the group felt awkward that they did not know enough about the everyday lives of their characters. Not knowing much about one's character brought feelings of discomfort, but also prompted some of the group to resolve to learn more, as Participant B explains:

“Because we were, you know, answering questions... I felt bad that I didn't know enough about trees – my own species. I make a load of stuff up and that made me uncomfortable, actually....So yeah, all of that information. Like, I'm curious. Now I'm gonna go do some research.” – *Participant B*

Some members of the group appreciated the moment-to-moment nature of the improvisation, but also being invited to become more conscious of the specific habitats in the park.

“I found that I connected with the idea much more when we were actually out there, connecting to ...the environment. I think the question that came up for me were the thoughts I was having, how to sustain them outside of [the game]....I felt like there was some exercises in mindfulness and just being much more conscious of surroundings. I really liked it at the end, when we were all like stroking the trees, I can imagine that looked slightly absurd...I guess being playful, but with a purpose underneath it all.... just being in that space of really relating to your environment and relating to people and speaking, I think it just turns on a different part of your brain being in these kinds of environments, because it's so different” – *Participant C*

Others picked up on the discursive encounters between characters and how these highlighted the relations between park dwellers:

“Conversations with other fellows would start to kind of generate a different understanding ... like I, in particular, I spoke to Tree and Ruff the Dog to start to understand different sort of relations that emerge that could relate to how humans create that environment [which] could be damaging...for all the species” – *Participant D*

These excerpts demonstrate moments of shared learning, as more experienced players create credible contexts for play and those with knowledge about their species use this to inform on species' everyday lives. These are, further, potential prompts for self-directed learning. The excerpts show participants' own emphasis on relating, beginning to see oneself as part of a wider set of dynamics (rather than as an individual), which is a form of learning that is hard to articulate and measure, but represents a change in ethos.

Emerging thoughts on intimacy

It makes sense to connect the strategy **‘Playful, collective experiences of being an animal or plant’** with ideas of intimacy. In the *Algorithmic Food Justice* project Catlow and co-authors theorised interspecies roleplay in terms of complicity – in knowing the impossibility of ever representing a being beyond yourself, but in profoundly enjoying the shared mischief that such an opportunity presents, and, indeed, using the creation of outlandish fictions to perform ‘knowing’ shared critique of human and non-human relationships (Houston et al. 2022). Catlow talks of ‘empathy pathways’, but CreaTures’ research on *Treaty* develops a line of thinking on the related theme of *intimacy*, which calls for less projection.

Cultural theorist Lauren Berlant offers a relational understanding of intimacy that detaches it from sexuality and other forms of tight coupling. She argues that intimacy generates ‘an aesthetic of attachment, but no inevitable forms or feelings are attached to it’ (Berlant 1998, 284–85). Intimacy, then, in events like *Treaty* is a coming-together to share powerful moments that stay as connections between people, forged as shared encounters in a temporary space - drawing on mobile processes of attachment, such as the one of which Berlant speaks. What we take from intimacy in these contexts is the charge in the encounter, so that people are brought into relations that form brief new structures, with no institutional bearings and pre-conceptions of the work to be done in making sense of the encounter, yet offering a quality that is precious and inter-subjective. This quality is almost totally impossible to produce at scale, for it loses the significant connection brought by the charge of mutual recognition and subsequent affective change.

It is one that is hard to speak about in general, but also as a researcher. Sehlirkoglu, and Zengin ask ‘How might one provide evidence of intimacy, especially when it is one of the least describable experiences in human life? The most intimate moment is the most difficult to describe, one that poets dwell on and novelists are haunted by – and which seems to enchant ethnographers too’ (2015, 23). Like a sense of relatedness, above, the qualities of intimacy are those that are sensed by embedded creative practitioners, but overlooked by formal evaluation protocols, especially those assessing more material forms of value.

We suggest that the play of a live action roleplay, and particularly in the invitation to devise a new treaty (i.e. a new way of relating), creates the conditions for intimacy. Play makes spaces for informal intimacies to grow, and happen on many levels, recognised in the catching of the eye or shared gasp of recognition. This co-production of intimacies is particularly salient when masked players begin to adopt the behaviours of other species.

Canine players may explore the edges of permission, sniffing shoulders and nuzzling strangers, navigating the physical taboos of human mutual existence using the cover of the species' masks and taking the freedoms allowed in play. Here, rather than talk of emotional intimacy (though this may be invoked), we talk of *participative intimacy* (Light 2021), as the glancing quality of coming-together to share an encounter that holds the seeds of transformation in it (rather than the base of enduring partnerships).

Treaty, then, is a sensitizing tool aimed at changing humans' perceptions and appetite for care of other species. What is supposed to fall out of the play in the minds of the species – humans – that legislates about park use and can lobby for more ecologically sensitive management is a sense that new park relations could come about. And, beyond that, *Treaty*, in existing and in being played, suggests a different way of thinking about other species to animate discussions of social (and ecological) justice. (We hear hints that indicate a shift in understanding of abstract concepts like greater 'interspecies justice', but it cannot be determined systematically by evaluating the outcomes of a roleplay, even one as dedicated to species equality as *Treaty*.)

Analysis of the conversations during the event and at the debriefing shows that, while different people take different aspects away with them, there is a sensitizing and a suggestion of thoughtfulness and possible actions to be taken. These actions do not fall in traditional 'sustainability' areas, such as turning off lights and recycling. As we discuss below, they speak to a shift in how relations are understood and the cultural change necessary to make shifts to more liveable futures.

Setting strategies into a wider context: concluding points

Good science dictates that specific inputs treated by specific processes can be judged as effective in producing specific effects. When we consider cultural change towards more sustainable futures, such tidy equations do not function. Cultural change cannot be tested in a laboratory and it cannot be created in the timeframes of a three-year project. Instead, we have a range of inputs that are idiosyncratic at the level at which indicative change occurs (in the individual or group) and a range of outputs that are similarly localized and situated in contexts and contingencies of meaning, priorities, circumstances and so on. They must be relevant to geographies, climates and moments, on the one hand, and existing cultures, on the other. Therefore, we can only present the effects of strategies in context, to show, first, how finely-tuned such practice has been made to the context and, second, what can be achieved by this painstaking attention to reaching particular communities and promoting particular connections, orientations and/or learning opportunities.

In other words, in this context, the creativity and responsiveness of the practitioners' work is not a weakness or inconsistency, but benefits us with recognition that targeted work is needed to demonstrate the relevance of thinking (and feeling) differently and developing relational skills when most of us are busy with everyday preoccupations and not looking at relations between our actions and greater world movements.

In design research, it is a fundamental that any design must be *fit for purpose*. Sometimes it is not clear what this 'fitness' is in advance – learning what is needed takes research in context and with the people that it is being designed for. In our studies of ExP partners, we have seen this kind of research in the development of experiments into strategies that inform the processes they use. (More on design research can be found in Rodgers and Yee 2014.) Here we show how the effects of strategies are bound up with the strategy itself and the circumstances in which it is materializing. We have presented one extended case study as a means to introduce the making of effects, along with some user data from observing the

activities that formed part of the CreaTures programme. (Observation data methods were affected by measures put in place in regard of the Covid-19 pandemic and this is discussed as part of the case study.)

Speaking as researchers, we are, of course, keen to show correlations and causalities, so that knowledge can be generated on how the skills and processes of creative practitioners contribute to mitigation and adaptation among broad populations. We recognise that creative practitioners' attention to context means much of what is being learnt must be adapted to fit and we describe how that might be attempted.

Factors like the specificity of approaches and the open-endedness of the responses sought by practitioners mean that even those with strong motivation to make fair and ecologically-sound futures may not be speaking in terms of 'impact' as such. In D4.3 and D2.3, practitioners associated 'effects' with observable, causal change (preferred over 'impact' as a term by the group). However, our creative partners have expressed a range of concerns about making claims for the effects of their practices (e.g. see Deliverable D4.3 which reports on a practitioner workshop on evaluation). Whereas some practitioners want to make more concrete claims about the effects of their practices but do not know how, others have refused the possibility of claiming effects whatsoever. In D2.3, we identified that partners had very different ideas about the controllability of transformation processes, again leading to unease about claiming effects.

Many interviewees prefer to describe their work in terms of transformative potential, rather than transformative effects. This has been perceived as a lack in specific settings, for example, by funding bodies, whereby the practices are de- or undervalued. D2.3 explores further the historical power asymmetries between the humanities and scientific practices which continues to be reproduced and to be felt today, particularly in engagements with eco-social topics. Despite the complex and irreducible nature of much cultural change work, there is still an expectation that topics will be picked off and 'solved'. These forms of creative practice bring a knowledge tradition that does not seek to compress multidimensionality into simpler forms, but it risks speaking a language that other groups of change-makers cannot understand.

Key elements missing in evaluating creative practices for the change that they can make are a recognition that:

- everyday responses to climate collapse are not thematically organised into categories such as energy consumption, food waste and so on;
- one size will not fit all, but when stimulating rethinking of relations, particular starting and ending points cannot be judged a-priori, but emerge and are responded to in the process of engagement;
- a *creative* society is more adaptive and better able to innovate as growing mitigation and adaptation are needed, so creative practice that liberates others' potential is especially useful.

This is, to some extent, acknowledged in Galafassi et al.'s claim that 'the multidimensional and multifaceted effects of the arts' challenge 'current social science tools and methodologies' (Galafassi et al. 2018, 75). Moore and Milkoreit highlight the difficulties in 'determining causal links between imagination and transformative change in complex adaptive systems', noting that this 'present[s] significant methodological challenges...current tools and approaches poorly match system properties like uncertainty, nonlinearity, and emergence... neither imagination nor transformation can easily be reduced to cause-effect analyses or linear assumptions' (Moore and Milkoreit 2020, 8).

Our case study methodology seeks to address these shortcomings of method by drawing out the evolution of techniques and showing how the development of particular processes speaks to a growing certainty on the part of the designer of the process as to its effectiveness in context and with particular goals in mind. This approach is appreciative of the judgment of the designers and the effects they wish to create (cf. Goodman, Stolterman, and Wakkary 2011), but also considers that immediate affective and cognitive effects, such as imagining difference, grasping connections, feeling greater care, etc, do not necessarily translate into demonstrable longer-term effects, such as climate activism, greater reuse and recycling, etc.

That said, if the desired goal is transformed futures, we stay agnostic at this point as to whether more compassionate and invested populations are going to create fairer and more ecologically sound worlds, but some evidence from other arts-led transformations shows the promise of this kind of sensitising activity (e.g. Light and Akama 2014; Clarke et al. 2016).

Where we include audience data, it is to show how the intentions of the designers marry up with the experience of the people involved in the process. We might group all these experiences under the umbrella of promoting 'ecological citizenship', but the individual processes do not result in a particular passport to that ecological civilisation, as it is still being assembled through the aggregation of these concerns.

Last, we reflect on what such processes in aggregate begin to create as more than the sum of their parts. It is at this level that we can most meaningfully abstract our findings. For instance, while transformative strategies are most effective as intimate, local undertakings with time for group reflection and paths for action, which sounds non-replicable, this does mean that we know we can take these insights and apply them across different contexts and regions, so long as the attention to detail and intimacy pertain. And, while intimacy itself cannot scale and media coverage is limited in its power to have direct effects, the two forms of awareness-raising complement each other and provoke greater benefits in tandem, so long as nothing intervenes to create a sense of hopelessness or powerlessness, which, our research notes, are barriers to responsive communities and agility for change.

In conclusion

We draw together our overall conclusions of the Deliverable here (since the last section is a self-contained Appendix).

Our core objectives in this work package were:

- To work within our multidisciplinary consortium and extended networks to locate a variety of initiatives that focus their work on the area of social and ecological sustainability.
- To conduct systematic mapping, connecting, and analysis of their purpose, how they operate, with whom/how/where they work, their conceptual and practical approaches to creative practice, and how they currently understand and evaluate the social and ecological impacts of their work.

We have gathered together a corpus of 148 case examples of transformative creative practices, via the CreaTures consortium and its extended networks plus reviews of the sustainability transformations field (as it intersects with creative practice). We have conducted systematic mapping and analysis: firstly of the topics that these projects are interested in. There, we find a focus on remedial or restorative action rather than encountering straightforward problems-and-solutions pairings.

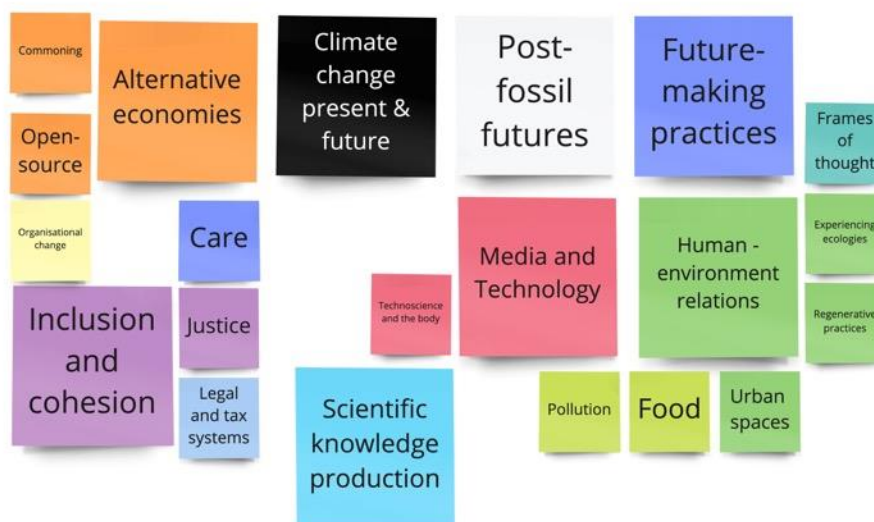


Figure 31: A snapshot of the case topics

In our analysis of topics, we see creative practitioners working on key sustainability challenges of climate breakdown, biodiversity loss, extractive economies and injustice, but with an emphasis on *how things could be otherwise*. Practical experiments in alternative economies sit alongside speculative imaginings of post-fossil futures. Reflexive practice is a core part of this work, as modes of knowledge production also become topics in their own right.



Figure 32: The key clusters identified in the case analysis board

When analysing the 148 cases to discern transformative strategies, we see an inspiring heterogeneity of activities in the eco-social realm. The cases are not ontologically coherent; they range in size, scale and type of activity. Thus, our strategies also take on a multi-level character. The strategy **Transformative friendships** for example, can easily be explained as an interpersonal relationship between (two) people, whose transformative character may not have previously been recognised in evaluative practice. On the other hand, the strategy **Inter-disciplinary processes for epistemological & ontological exchange** is a higher level aggregate of multiple practices. Arts-science projects for example may assemble exercises for promoting trust and care within a group of different practitioners, field trips for learning together, and the shared co-production of works (that are then displayed for public audiences).

A broad distinction we want to tease out here, is around the way that creative practices are put to use in the service of eco-social goals. In some cases, creative practice is about making works that members of the public experience in traditional cultural venues (for example, the **Confronting Vegetal Otherness** case, which involved technology-mediated investigations into plant being, subsequently displayed to Kapelica gallery visitors). These remain within the ‘cultural’ realm, where what an artist is and does is meaningful for that particular milieu.

In other cases, we see creative approaches being put to work in wider formulations that seek to achieve very specific (material and social) outcomes, as in the work of the **Stove Network** in its arts-led regeneration of the town centre of Dumfries, resulting over time in the regeneration of a set of building for community and business benefit and being spun off as an arts-led Development Trust with 600 members.

Based on The *Embedded Artist Project* that Frances Whitehead initiated in Chicago, placing practicing artists into city government, Whitehead synthesised ‘what artists know’. We paraphrase this list. Artists have:

- an ability to synthesize diverse facts, goals and references...making lateral connections;
- an ability to produce of innovative and original knowledge and outcomes (responding to context appropriately rather than striving for consistency of inputs);
- creative, in-process problem solving;
- experience in participating in non-compensation (social) economies... with understanding of intangible values;
- skills in pattern and system recognition;
- skills in making visible the invisible (Whitehead 2006).

Indeed, many of the strategies that we have identified also resonate with her reflections.

From the analysis of the cases, we have selected a final, more concise set of 25 strategies that we felt provided the richest prompts or inspirations for seeding and steering change. Briefly, our rationale for this selection was as follows: in the first instance, we dropped out strategies that were less applicable to sustainability, for example those focussed on more generic processes of organisational change, and we also merged clusters that were similar.

Interdisciplinary processes for exchanging across difference				
1. Interdisciplinary processes for epistemological and ontological exchange	2. Facilitation of intercultural dialogues	3. Interdisciplinary processes to activate communities	4. Including those not usually ‘included’ in creative settings	5. Processes that engage with power / governance reflexively
6. Using making practices	7. Working from places or environments	8. Embedding mutual care	9. Creating prefigurative formations	
New stories for better futures				
10. Worldbuilding imaginaries through texts	11. Creating speculative artefacts and environments	12. Experiences of future sustainable worlds	13. Playful and critical game-like formats	
Relations between humans and other forms of life				
14. Critical and aesthetic encounters with living materials	15. Artists using their bodies for interspecies relations	16. Mindfully inhabiting naturecultural sites	17. Playful, collective experiences of being an animal or plant	
Organisational formats		Transformers		

18.Governance and accountability structures	19.Multiple modes of production	20.Translations between policy and practice	21.New frames into institutions
Resources	Pedagogy	Friendship	Temporality
22.Resources for eco-social practitioners	23.Transformative pedagogy	24.Transformative friendship	25.Looking back in time to discern transformative change

Figure 33: The 25 strategies taken from the analysis

Creative practitioners are designing processes, creating new stories, making visible or (re)creating relations between humans and other forms of life, creating novel organisational forms, doing translation work, marshalling resources, teaching others, becoming friends and reflecting on their practice over time. These strategies – things that artists do (or are embedded in doing) towards eco-social change – provide an entry-point into understanding how creative practitioners can and do help to move audiences of all kinds towards more sustainable futures. This is practice-focussed knowledge that will be of interest to other creative practitioners, sustainability scholars and policymakers, however it should ideally sit alongside other forms of system-focussed knowledge (i.e. the approach being taken in WP4) to create a more complete picture of transformative change.

Finally, our objective also asks us to explore evaluation – namely how creative practitioners have evaluated the social and ecological impacts of their work. In this Deliverable, we have made some specific arguments about evaluative practice. We have recognised that evaluation is conducted at different points by different groups for different purposes. We have also shown how creative practitioners reflect and learn deeply at the level of practice, for example in our case study of *Treaty*, we investigate how the creative strategy **Playful, collective experiences of being an animal or plant** was developed and refined over multiple iterations, on the basis of multiple data points from self and practitioners' reflections. This is coherent and integrative practice which is under-articulated outside of creative organisations. Can these longer-term reflections be considered 'evidence' in ways that translate across to other sectors, for example policymaking? Or are the material effects of practice (i.e. changed behaviours) all that matters here? We pick these questions up in other parts of the project, through policymaker engagement (in WP4 and WP5).

Indeed, the precarity of creative funding means that the overt forms of evaluation in use (for example how artists engage stakeholders such as audiences / participants, peers, institutions etc. in a particular project) are those that feed into the ongoing process of acquiring funding and producing work. As researchers, to understand the significance of creative practice for sustainability transformation, we need to continue to work at the timescales (longer?) and units of analysis (intimate) that are significant to practitioners, and also to understand the fullness of their self-evaluation as part of a wider programme of engagement with the topic of creative practice and sustainability transformations.

Appendix: Designing the Observatory website

Further work on repositories

Part of working towards our WP2 objective was to present the findings of this work on an evolving website that functions as both a repository and a hub, named the CreaTures Repository. In D2.3 we set out our design approach, and here we provide an update. We hold information about the case corpus in two locations:

The Graph Commons platform

We wanted to document our analysis thoroughly at each stage, so that readers could clearly understand how we collected the cases and could look up each one specifically. A record of each case is currently held on the interactive Graph Commons platform. People can visit the site and click on any node to see a summary of the case, and use the links provided to learn more.

The CreaTures website

After the strategies had been formed, we wanted to clearly communicate them to key stakeholder groups, such as other creative practitioners, researchers and policy makers using the CreaTures website.

In D2.3 we reviewed a range of existing repositories, which helped us to establish some broad design principles. We worked with the Plurality University Network, (a non-profit organisation based in France working on educational and cultural programming around futures), to bring nine repository-holders together for an engagement event to discuss what prompted their own repositories, and how they work. The online event Ingredients for change: collecting and sharing transformative practices took place in March 2022, and features presentations and a discussion between nine collectors about seven repositories.

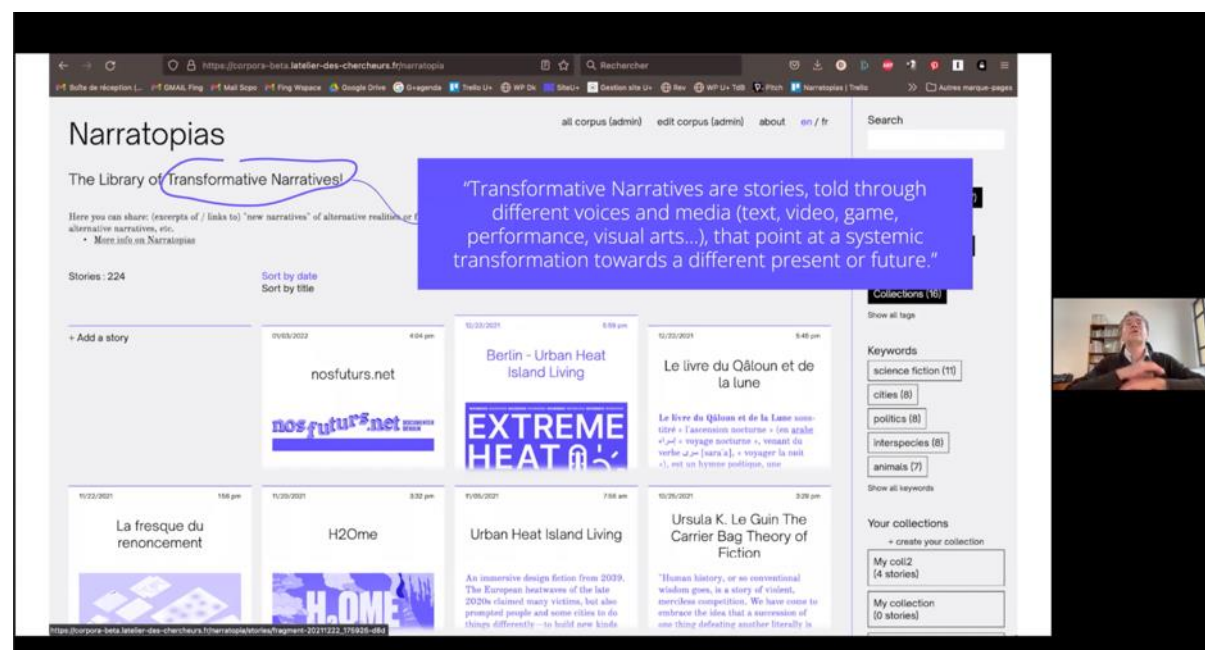


Figure 34: A still from Daniel Kaplan's presentation

- Daniel Kaplan and Chloé Luchs-Tassé of the [Plurality University Network](#) presented their digital collaborative library [Narratopias](#) that gathers works of fiction, visual arts, speculation, design, that put forward transformative narratives.
- Kelli Rose Pearson presented the [ReImaginary Project](#) a collection of arts-based methods for transformative engagement.
- Diego Galafassi and David Tàbara presented their Living Catalogue of the [Arts for Sustainability Transformations](#) that relates creative projects to the Sustainable Development Goals.
- Romain Julliard, presented the research project [Mosaic](#), which helps collective projects in the conception of data exchange platforms, using participatory science methods.
- Lewis Coenen-Rowe from [Creative Carbon Scotland](#) presented the [Library of Creative Sustainability](#), which records projects in which artists have a distinctive role in change-making.
- Garry Peterson, from the Stockholm Resilience Centre presented the collaborative [Seeds of Good Anthropocene](#) project that collects seed projects that can be used to create richer scenarios.

Four key points emerged from the discussion:

1. The longevity of repositories

This had two dimensions – firstly all speakers noted the labour-intensive nature of creating repositories. The extent to which repositories were structured taxonomies (that provide insights in and of themselves) versus more unruly collections, was also a factor here, since analysis and structuring work was time-consuming. Keeping repositories up to date was a challenge given the short-term funding associated with these.

2. Placing knowledge into context

Presenters noted the tacit qualities of creative practices, that were not easy to capture in short-form writing. Some repositories were comprised of ‘how-to’ toolkits that aimed for high levels of transferability, while others focussed on presenting specific cases that could demonstrate what was possible at the intersection between creative practice and sustainability. Yet other repositories gathered snippets of existing materials in a shared commons.

3. Questions of evaluation

Part of the discussion focussed on evaluation. How can we know that the projects we are sharing have a high degree of transformative potential? This was a difficult question for the repositories that were on the lookout for emergent practices, which by their nature tended towards experimental and still-solidifying forms.

4. Effectively reaching audiences

Repositories had very different purposes and a variety of different audiences associated with that. Some had a clear sense of who their audiences were, while others gathered a community in and through the crowdsourcing of the materials.

Our approach – strategies + case examples

Drawing from these discussions we opted for a relatively curated approach to the CreaTures website design. Given that information about all the cases is accessible on the Graph Commons platform, we decided to choose one case to represent each strategy for the website. These have been written up as short case studies, in a journalistic style that is

comprehensible to creative practitioners, researchers and policy makers. We have provided some previous examples in D2.3, and now we provide one final case example in order to show how the strategies and cases are linked.

The strategy: Transformative friendship

The case example:

On transformative friendships

With Felipe G. Gil and Maria Ptqk



Figure 35: A screenshot from the video interview conducted with Felipe and Maria to delve deeper into the idea of transformative friendship

Context:

“The people that we have collected as friends are the key, they are the heart of what we do...we keep going because we have met these people” - Felipe

When CreaTures began in 2020, we asked our colleagues to nominate transformative projects for our ‘Observatory’ (the section of the project where we map key directions in eco-social sustainability). To our delight, rather than nominate projects or art works, Felipe Gil from Zemos98 nominated his friend Maria Ptqk. In doing so, Felipe challenged us on idea of what a ‘case’ could be. Felipe and Maria helped us to understand that much of the transformational power of creative projects comes from the relationships that they create, and so this case explores what a transformative friendship looks and feels like.

Transformative creative practice:

Fostering new relationships between people with different disciplinary backgrounds is a core part of Part of ZEMOS98’s work, and Felipe first discovered Maria when he was looking for people to invite to one of their events. Maria transformed ZEMOS98 by introducing them to different ways of understanding the world from a feminist perspective. Learning about the reproductive economy (all the care work that contributes to economic structures but isn’t ordinarily recognised, such as cleaning, and childcare) helped ZEMOS98 to deepen their practice. They recognised care not only as theoretical concept, but also an invitation to practice a different kind of ethics within the cultural sector. More recently, Maria has shared emerging ideas of ecological interconnectedness with Felipe and ZEMOS98, where humans

are understood as just one species in relationship to many others, living together on a shared planer (a damaged planet that is urgently in need of regeneration).

For Maria, Felipe and ZEMOS98 have formed part of a valued community that sustains and renews her practice. She comments:

“Sustainability is something that you tend not to see unless you lack it. Only when you feel yourself vulnerable, you realise what you need to sustain yourself. Coming back to this idea of community and networking – in the longest run that’s what supports you... Support can be material or economic, it can be political in the sense of providing a sense of purpose to what you do... Having the people around you that create value, and give meaning, then you feel that you are building something together.” - Maria

Transformative friendship, then is not only about liking or loving someone, but includes those in a shared community, who work together to shape a combined context and sense of purpose. Part of transformative friendship is also being open and critical – being able to talk to each other about what has failed and how to improve things for next time.

Connections to eco-social sustainability:

Maria’s current work explores what she calls a new “multispecies paradigm” – a necessary shift in our worldview from being completely human-centric to recognising the symbiosis between humans and all other beings on earth.



Figure 36: Maria's book 'Especies del Cthuluceno' explores the figure of the Chthulucene (from Donna Haraway) combining sci-fi, ecological and artistic perspectives.

“All of us earth beings are part of a unity of life, which manifests itself in different forms. This comes from biology, but it obviously has deep philosophical implications and cultural and political implications...it’s connected to the multispecies new paradigm, to biocentrism, to ecological thought and a lot of that of course, but it also implies a shift of paradigm... for me it’s very interesting because it’s really on the edge of what is called science and what is called – whatever else – philosophy, cultural studies, whatever, art! I am attracted to that edge because it is totally unstable.” - Maria

On learning and evaluation:

In her role as a researcher, Maria has explored the impacts of creative projects. She finds the most compelling transformations happen to those involved in them. What she calls a

“reverberation” doesn’t happen immediately, but might become visible long after a project, when relationships have taken time to fully mature and influences have become discernible. We might think of a stone thrown into a pond, where ‘impacts’ reach partners and collaborators first, moving on to other that they may subsequently influence. For her, the question of how to reliably record these changes to relationships is an open question:

“How can we measure that impact? I would say we have to use our imagination and our creativity as cultural practitioners to invent ways to make that visible, to invent indicators and new words. We need a new vocabulary to speak about that kind of impact... a reverberation” – Maria.

Felipe adds: *“If you put in a report “I made a new friend” it seems like homework for school... but indeed it is crucial...If we could work out how to document these things without sounding naïve...We have to change the ways that we report projects and the way that we value them.”- Felipe*

In this interview, Felipe and Maria put forward a truly relational perspective. What matters is how we can think and talk about the relationships that we have. This holds true for Maria’s poetic description of the unity of life, and Felipe’s question about how to record transformative friendships. We need better ways of capturing their significance and making them visible to those in different fields or disciplines.

Learn more:

Zemos98: <http://zemos98.org/>

Maria Ptqk: <https://www.mariaptqk.net/>

Science Friction: <https://www.cccb.org/en/exhibitions/file/science-friction/234907>

Credits:

Thanks to Maria Ptqk and Felipe G. Gil for doing the interview.

Nominator quote:

“Lately, I think Maria is leading in Spain, something that is now happily a global trend, which is: we cannot stay in the cultural sector as we were before, just producing things without [acknowledging] the ecological context we are all facing as a humanity...We need to learn a lot from many people, but Maria is one of the people that we just basically, follow”. - Felipe

References

- Amsler, Sarah, and Keri Facer. 2017. 'Contesting Anticipatory Regimes in Education: Exploring Alternative Educational Orientations to the Future'. *Futures* 94 (November): 6–14. <https://doi.org/10.1016/j.futures.2017.01.001>.
- Barad, Karen Michelle. 2007. *Meeting the Universe Halfway: Quantum Physics and the Entanglement of Matter and Meaning*. Durham, N.C: Duke University Press.
- Bendor, Roy, David Maggs, Rachel Peake, John Robinson, and Steve Williams. 2017. 'The Imaginary Worlds of Sustainability: Observations from an Interactive Art Installation'. *Ecology and Society* 22 (2). <https://doi.org/10.5751/ES-09240-220217>.
- Bennett, Elena M, Martin Solan, Reinette Biggs, Timon McPhearson, Albert V Norström, Per Olsson, Laura Pereira, et al. 2016. 'Bright Spots: Seeds of a Good Anthropocene'. *Frontiers in Ecology and the Environment* 14 (8): 441–48. <https://doi.org/10.1002/fee.1309>.
- Bentz, Julia, Karen O'Brien, and Morgan Scoville-Simonds. 2022. 'Beyond "Blah Blah Blah": Exploring the "How" of Transformation'. *Sustainability Science* 17 (2): 497–506. <https://doi.org/10.1007/s11625-022-01123-0>.
- Berlant, Lauren. 1998. 'Intimacy: A Special Issue'. *Critical Inquiry* 24 (2): 281–88. <https://doi.org/10.1086/448875>.
- Biermann, Frank. 2021. 'The Future of "Environmental" Policy in the Anthropocene: Time for a Paradigm Shift'. *Environmental Politics* 30 (1–2): 61–80. <https://doi.org/10.1080/09644016.2020.1846958>.
- Braun, Virginia, and Victoria Clarke. 2019. 'Reflecting on Reflexive Thematic Analysis'. *Qualitative Research in Sport, Exercise and Health* 11 (4): 589–97. <https://doi.org/10.1080/2159676X.2019.1628806>.
- . 2020. 'One Size Fits All? What Counts as Quality Practice in (Reflexive) Thematic Analysis?'. *Qualitative Research in Psychology* 18 (3): 1–25. <https://doi.org/10.1080/14780887.2020.1769238>.
- Clarke, Rachel, Jo Briggs, Ann Light, and Pete Wright. 2016. 'Situated Encounters with Socially Engaged Art in Community-Based Design'. In *Proceedings of the 2016 ACM Conference on Designing Interactive Systems*, 521–32. DIS '16. New York, NY, USA: Association for Computing Machinery. <https://doi.org/10.1145/2901790.2901882>.
- Crookall, David. 2010. 'Serious Games, Debriefing, and Simulation/Gaming as a Discipline'. *Simulation & Gaming* 41 (6): 898–920. <https://doi.org/10.1177/1046878110390784>.
- Dadusc, Deanna. 2019. 'Enclosing Autonomy'. *City* 23 (2): 170–88. <https://doi.org/10.1080/13604813.2019.1615760>.
- Díaz, Sandra, Sebsebe Demissew, Carlos Joly, W. Mark Lonsdale, and Anne Larigauderie. 2015. 'A Rosetta Stone for Nature's Benefits to People'. *PLoS Biology* 13 (1): e1002040. <https://doi.org/10.1371/journal.pbio.1002040>.
- Escobar, Arturo. 2018. *Designs for the Pluriverse: Radical Interdependence, Autonomy, and the Making of Worlds*. New Ecologies for the Twenty-First Century. Durham: Duke University Press.
- Feola, Giuseppe. 2015. 'Societal Transformation in Response to Global Environmental Change: A Review of Emerging Concepts'. *Ambio* 44 (5): 376–90. <https://doi.org/10.1007/s13280-014-0582-z>.
- Fuller, Matthew, and Eyal Weizman. 2021. *Investigative Aesthetics: Conflicts and Commons in the Politics of Truth*. <https://search.ebscohost.com/login.aspx?direct=true&scope=site&db=nlebk&db=nlabk&AN=2959103>.
- Gabrys, Jennifer. 2016. *Program Earth*. Minnesota.
- Galafassi, Diego, Sacha Kagan, Manjana Milkoreit, María Heras, Chantal Bilodeau, Sadhbh Juarez Bourke, Andrew Merrie, Leonie Guerrero, Guðrún Pétursdóttir, and Joan

- David Tabara. 2018. "Raising the Temperature": The Arts on a Warming Planet'. *Current Opinion in Environmental Sustainability* 31 (April): 71–79. <https://doi.org/10.1016/j.cosust.2017.12.010>.
- Geels, Frank W. 2011. 'The Multi-Level Perspective on Sustainability Transitions: Responses to Seven Criticisms'. *Environmental Innovation and Societal Transitions* 1 (1): 24–40. <https://doi.org/10.1016/j.eist.2011.02.002>.
- Ghosh, Amitav. 2016. *The Great Derangement: Climate Change and the Unthinkable*. The Randy L. and Melvin R. Berlin Family Lectures. Chicago: The University of Chicago Press.
- Gibson-Graham, J. K. 2006. *The End of Capitalism (as We Knew It) : A Feminist Critique of Political Economy*. illustrated, reprint ed. Minneapolis: U of Minnesota Press.
- Goodman, Elizabeth, Erik Stolterman, and Ron Wakkary. 2011. 'Understanding Interaction Design Practices'. In *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems*, 1061–70. CHI '11. New York, NY, USA: Association for Computing Machinery. <https://doi.org/10.1145/1978942.1979100>.
- Haraway, Donna J. 2003. *The Companion Species Manifesto: Dogs, People, and Significant Otherness*. Prickly Paradigm Press. <https://press.uchicago.edu/ucp/books/book/distributed/C/bo3645022.html>.
- Houston, Lara, A. S. Taylor, Sara Heitlinger, and Ruth Catlow. 2022. 'Algorithmic Food Justice'. In *Ecological Reparation*. Bristol University Press. <https://bristoluniversitypress.co.uk/ecological-reparation>.
- Hummels, Caroline, Ambra Trotto, Jeroen Peeters, Pierre Levy, Jorge Alves Lino, Sietske Klooster, and Mark Anderson. 2019. 'Design Research and Innovation Framework for Transformative Practices'. In *Strategy for Change Handbook*, 52–76. Glasgow Caledonian University.
- Jaakkola, Noora, Meeri Karvinen, Kirsi Hakio, Lili-Ann Wolff, Tuuli Mattelmäki, and Mervi Friman. 2022. 'Becoming Self-Aware—How Do Self-Awareness and Transformative Learning Fit in the Sustainability Competency Discourse?' *Frontiers in Education* 7. <https://www.frontiersin.org/article/10.3389/educ.2022.855583>.
- Jasanoff, Sheila, and Sang-Hyun Kim. 2015. *Dreamscapes of Modernity: Sociotechnical Imaginaries and the Fabrication of Power*. Chicago ; The University of Chicago Press.
- Johns-Putra, Adeline. 2016. 'Climate Change in Literature and Literary Studies: From Cli-Fi, Climate Change Theater and Ecopoetry to Ecocriticism and Climate Change Criticism'. *WIREs Climate Change* 7 (2): 266–82. <https://doi.org/10.1002/wcc.385>.
- Kagan, Sacha. 2015. 'Artistic Research and Climate Science: Transdisciplinary Learning and Spaces of Possibilities'. *Journal of Science Communication* 14 (01): C07. <https://doi.org/10.22323/2.14010307>.
- Kagan, Sacha, and Volker Kirchberg, eds. 2008. *Sustainability: A New Frontier for the Arts and Cultures*. Higher Education for Sustainability 3. Frankfurt am Main: VAS.
- Kendig, Catherine, and Wenda K. Bauchspies. 2021. 'The Ethics of Speculative Anticipation and the Covid-19 Pandemic'. *Hypatia* 36 (1): 228–36. <https://doi.org/10.1017/hyp.2020.56>.
- Latimer, Joanna, and Mara Miele. 2013. 'Naturecultures? Science, Affect and the Non-Human'. *Theory, Culture & Society* 30 (7–8): 5–31. <https://doi.org/10.1177/0263276413502088>.
- Law, J. 2004. *After Method: Mess in Social Science Research*. Psychology Press.
- Law, John. 2015. 'What's Wrong with a One-World World?' *Distinktion: Journal of Social Theory* 16 (1): 126–39. <https://doi.org/10.1080/1600910X.2015.1020066>.
- Lessig, Lawrence. 2004. *Free Culture: How Big Media Uses Technology and the Law to Lock down Culture and Control Creativity*. Penguin.
- Light, Ann. 2006. 'Adding Method to Meaning: A Technique for Exploring Peoples' Experience with Technology'. *Behaviour & Information Technology* 25 (2): 175–87. <https://doi.org/10.1080/01449290500331172>.

- Light, Ann, and Yoko Akama. 2014. 'Structuring Future Social Relations: The Politics of Care in Participatory Practice'. In *Proceedings of the 13th Participatory Design Conference: Research Papers - Volume 1*, 151–60. PDC '14. New York, NY, USA: Association for Computing Machinery. <https://doi.org/10.1145/2661435.2661438>.
- Light, Ann, Deborah Mason, Tom Wakeford, Ruth Wolstenholme, and Sabine Hielscher. 2018. 'Creative Practice and Transformations to Sustainability: Making and Managing Culture Change'.
- Light, Ann, and Christina Welch. 2018. 'The Cultural and Spiritual Aspects of Growing Edible Plants: Testing for Meaningfulness in Leeds, UK'. In *Routledge Handbook of Landscape and Food*, by Joshua Zeunert and Tim Waterman, 572–84. Abingdon, UK: Routledge.
- Macy, Joanna, and Molly Young Brown. 2014. *Coming Back to Life: The Updated Guide to the Work That Reconnects*. British Columbia: New Society Publishers.
- Maggs, David, and John Robinson. 2020. *Sustainability in an Imaginary World: Art and the Question of Agency*. Oxford: Routledge.
- Meadows, Donella. n.d. 'Leverage Points: Places to Intervene in a System - The Donella Meadows Project', 37.
- Milkoreit, Manjana. 2017. 'Imaginary Politics: Climate Change and Making the Future'. Edited by Anne R. Kapuscinski, Kim Locke, and Alastair Iles. *Elementa: Science of the Anthropocene* 5 (62). <https://doi.org/10.1525/elementa.249>.
- Moore, Brendan, Caroline Verfuërth, Angela Mae Minas, Christianne Tipping, Sarah Mander, Irene Lorenzoni, Claire Hoolohan, Andrew J. Jordan, and Lorraine Whitmarsh. 2021. 'Transformations for Climate Change Mitigation: A Systematic Review of Terminology, Concepts, and Characteristics'. *WIREs Climate Change* 12 (6): e738. <https://doi.org/10.1002/wcc.738>.
- Moore, Michele-Lee, and Manjana Milkoreit. 2020. 'Imagination and Transformations to Sustainable and Just Futures'. *Elementa: Science of the Anthropocene* 8 (1). <https://doi.org/10.1525/elementa.2020.081>.
- Moriggi, Angela, Katriina Soini, Alex Franklin, and Dirk Roep. 2020. 'A Care-Based Approach to Transformative Change: Ethically-Informed Practices, Relational Response-Ability & Emotional Awareness'. *Ethics, Policy & Environment* 23 (3): 281–98. <https://doi.org/10.1080/21550085.2020.1848186>.
- Muiderman, Karlijn, Aarti Gupta, Joost Vervoort, and Frank Biermann. 2020. 'Four Approaches to Anticipatory Climate Governance: Different Conceptions of the Future and Implications for the Present'. *WIREs Climate Change*, September. <https://doi.org/10.1002/wcc.673>.
- Muller, Lizzie, Lynn Froggett, and Jill Bennett. 2020. 'Emergent Knowledge in the Third Space of Art-Science'. *Leonardo* 53 (3): 321–26. https://doi.org/10.1162/leon_a_01690.
- Ostrom, Elinor. 2015. *Governing the Commons: The Evolution of Institutions for Collective Action*. Canto Classics. Cambridge: Cambridge University Press. <https://doi.org/10.1017/CBO9781316423936>.
- Patterson, James, Karsten Schulz, Joost Vervoort, Sandra van der Hel, Oscar Widerberg, Carolina Adler, Margot Hurlbert, Karen Anderton, Mahendra Sethi, and Aliyu Barau. 2017. 'Exploring the Governance and Politics of Transformations towards Sustainability'. *Environmental Innovation and Societal Transitions* 24 (September): 1–16. <https://doi.org/10.1016/j.eist.2016.09.001>.
- Pelzer, Peter, and Wytske Versteeg. 2019. 'Imagination for Change: The Post-Fossil City Contest'. *Futures* 108 (April): 12–26. <https://doi.org/10.1016/j.futures.2019.01.005>.
- Poli, Roberto. 2015. 'The Implicit Future Orientation of the Capability Approach'. *Futures* 71 (August): 105–13. <https://doi.org/10.1016/j.futures.2015.03.002>.
- Puig de la Bellacasa, María, . 2017. *Matters of Care : Speculative Ethics in More than Human Worlds*. Minnesota: University of Minnesota Press.
- Raworth, Kate. 2017. *Doughnut Economics: Seven Ways to Think Like a 21st-Century Economist*. London: Cornerstone.

- Rayner, Tim, and Asher Minns. 2015. 'The Challenge of Communicating Unwelcome Climate Messages'. The Tyndall Centre, University of East Anglia. <https://tyndall.ac.uk/working-papers/the-challenge-of-communicating-unwelcome-climate-messages/>.
- Rodgers, Paul A., and Joyce Yee, eds. 2014. *The Routledge Companion to Design Research*. London: Routledge. <https://doi.org/10.4324/9781315758466>.
- Scoones, Ian, Andrew Stirling, Dinesh Abrol, Joanes Atela, Lakshmi Charli-Joseph, Hallie Eakin, Adrian Ely, et al. 2020. 'Transformations to Sustainability: Combining Structural, Systemic and Enabling Approaches'. *Current Opinion in Environmental Sustainability* 42 (February): 65–75. <https://doi.org/10.1016/j.cosust.2019.12.004>.
- Sehlikoglu, Sertaç, and Aslı Zengin. 2015. 'Introduction: Why Revisit Intimacy?' *The Cambridge Journal of Anthropology* 33 (2). <https://doi.org/10.3167/ca.2015.330203>.
- Stoetzler, Marcel, and Nira Yuval-Davis. 2002. 'Standpoint Theory, Situated Knowledge and the Situated Imagination'. *Feminist Theory* 3 (3): 315–33. <https://doi.org/10.1177/146470002762492024>.
- Stripple, Johannes, Alexandra Nikoleris, and Roger Hildingsson. 2021. 'Carbon Ruins: Engaging with Post-Fossil Transitions through Participatory World-Building'. *Politics and Governance* 9 (2): 87–99. <https://doi.org/10.17645/pag.v9i2.3816>.
- Suchman, Lucy. 2007. *Human-Machine Reconfigurations*. 2nd ed. Cambridge: Cambridge University Press.
- Taylor, Charles. 2002. 'Modern Social Imaginaries'. *Public Culture* 14 (1): 91–124.
- Wakkary, Ron, William Odom, Sabrina Hauser, Garnet Hertz, and Henry Lin. 2015. 'Material Speculation: Actual Artifacts for Critical Inquiry'. *Aarhus Series on Human Centered Computing* 1 (1): 12–12. <https://doi.org/10.7146/aahcc.v1i1.21299>.
- West, Simon, L. Jamila Haider, Sanna Stålhammar, and Stephen Woroniecki. 2020. 'A Relational Turn for Sustainability Science? Relational Thinking, Leverage Points and Transformations'. *Ecosystems and People* 16 (1): 304–25. <https://doi.org/10.1080/26395916.2020.1814417>.
- Whitehead, Frances. 2006. *What do artists know?* Available at: <http://embeddedartistproject.com/whatdoartistsknow.html> Accessed 20 May, 2022

¹ See the Julie's Bicycle site for more information: <https://juliesbicycle.com/>

² See the Culture Declares Emergency website here: <https://www.culturedeclares.org/>

³ The GraphCommons interactive network map of the case corpus is available at this URL: <https://graphcommons.com/graphs/980d936d-92fc-4e12-9702-1b21eb55ff33>

⁴ To access the topics analysis board, on the web platform Miro, visit this URL: <https://miro.com/app/board/uXjVOWiAFd4=>

⁵ See the Nexus project website for further details here: <https://nexuscluster.eu/Projects.aspx>

⁶ For example, see the Centre for Cultural Value's We need to talk about the E-Word blog, and film that led to their Evaluation Principles

⁷ Find the strategies analysis Miro board at this URL: <https://miro.com/app/board/uXjVOWiHcfs=>

⁸ See the project Superdiversity – picturing Finsbury Park, more information available at: <https://www.furtherfield.org/superdiversity-picturing-finsbury-park/>