

CREATIVE PRACTICE AND TRANSFORMATIONS TO SUSTAINABILITY

Making and Managing Culture Change

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Creative Practice and Transformations to Sustainability: Making and Managing Culture Change.

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Our Purpose

Achieving a cultural shift towards sustainability will involve a diversity of approaches at different scales. What we propose here is not a uniform landscape replicating similar practice, but work that encourages creativity and positive responses to change, that recognises the value of process in itself for transformation and that finds new ways of bringing people together and inspiring new meaning and action. There are many entry points to this. This document suggests a few of them, drawing from the exemplary practice that is already happening. Among broader sources, we look at work supported by UKRI's Arts and Humanities Research Council in its *Connected Communities* programme to find processes that offer effective transformational potential to boost sustainability work.

Our purpose is threefold:

- 1) We show the commonalities in effective change-making across a range of practices that are not usually considered together, such as communal gardening, citizen science, story-telling and making performance. In other words, we use the term *creative practice* to include natural sciences, design and humanities.
- 2) We demonstrate that people can be engaged and find purpose and connection in activities that set out to change orientation to the future.
- 3) We argue that creative practice is an overlooked, but essential, tool in our quest to find a sustainable balance in resource use, lifestyles and ambitions for the planet.

Our work offers a vision of sustainability that is broader than the physical environment, including social and ecological justice as integral constituent parts – an inclusion both necessary to achieve transformation and worthy of ambitions for transformation.

The practices we describe use the power of the imagination to create new futures and provide hopeful and diverse paths. They do not provide a formula for scaling-up. The differences between processes in a series of locations may be more interesting than the commonalities. They are not, *per se*, about changing people or even awareness-raising. And

we are not to trying to force closure on the meaning of transformation. This is about using what people provide for each other to become the agents of change that the world badly needs.

Without hope, people are unlikely to take action. There needs to be some existential security and meaning before people are able to contribute to making and responding to change (see Zimbardo and Boyd, 1999, on the paralyzing effects of a fatalistic orientation).

However, the means exist to change how people feel about uncertainty and doubt, freeing them to be their best selves. Adopting these strategies will create greater opportunities for policymakers and scientists to support change.

Definitions: Creative Practice, Transformation, Sustainability

This commentary addresses the meeting of three concepts. We explain how we are using each here. Despite presenting them separately, our interest lies in where, when and how they intersect, so that creative practice can be transformational towards sustainability.

We chose the term “Transformations to Sustainability” to echo the NORFACE–Belmont 2017 funding call that addressed researchers in the social sciences and humanities, pointing to a growing awareness of a “need for more fundamental transformations in the way societies interact with each other and with the natural environment as the basis of sustainability” since incremental change, conventional knowledge and capacity building were not proving adequate. (NORFACE–Belmont Call for Proposals: Transformations to Sustainability [T2S] 2017).

Creative Practice

We use the broad term “creative practice” because it includes all constructive and imaginative labour: from writing, art and theatre to designing to repair cafes and open data hackathons; from community development to storytelling to participative citizen science and experimentation. Common to these practices is the use of personal and/or collective craft skills and ingenuity to make something new, renew or reinterpret some aspect of the world. Korn (2013) says: ‘Creative effort is a process of challenging embedding narratives of belief in order to think the world into being for oneself, and that the work involved in doing so provides a wellspring of spiritual fulfilment.’ We include both professional practitioners and those working only out of love in using this definition.

Looking at how it is understood by our informants, we notice four dominant modes of creative achievement across activities, which we characterize as:

- Illustrative: created to show relations, explain a theory, make attractive or other instrumental adoption of a creative medium for communication purposes. An example would be a film such as ‘Forget Shorter Showers’ which reinterprets an essay of the same name (by Derek Jensen) into a short, easy to watch film, using

humour and strong visual images to get the same information across.

<https://jore.cc/short/forget-shorter-showers/>

- Responsive: created in reaction to a feeling or stimulus, to express an affective state and share a mood or opinion. An example would be a poem about feeling oppressed by the enormity of climate change - such as Jas Kapel's 'Exigi Momentum' published as part of the Weatherstations anthology (<http://globalweatherstations.com/?p=2104>)
- Practical: created to change a set of materials into a more useful form. An example would be scrapstores - local initiatives collecting unwanted materials from business and industry and repurposing them for creative play, arts and crafts projects. (<https://www.scrapstoresuk.org/>)
- Transformative: created to have a significant affective, political or spiritual impact on self and others, often to a stated end but not always articulated in the work. An example would be Amy Shelton's 'Honeyscribe' project which she began "to explore the relationship between bee health, human, health, the environment and the arts" and which has produced a variety of tangible works, workshops and collaborations. (<http://www.amyshelton.co.uk/workshops/>)

These are not mutually exclusive; one practice can aspire to multiple modes and may not be successful at any. We articulate them separately here to help pin down what is taking place in some of the examples in this study, where we are looking for common features of effective transformative practice.

Claims for creative practice as a form of transformation are already numerous, but mostly address art, e.g. "Humans are capable of a unique trick, creating realities by first imagining them, by experiencing them in their minds. As soon as we sense the possibility of a more desirable world, we begin behaving differently, as though that world is starting to come into existence ...The act of imagining somehow makes it real... And what is possible in art becomes thinkable in life." (Brian Eno, <http://longnow.org/essays/big-here-and-long-now>, 1995)

"Artists can be the circuit breakers of tragedy, surprising people with alternative ways of seeing, jolting them awake from denial and speeding up a public process of seeing and feeling the 'truth' of climate change. They can make the moment of recognition less painful by opening possibilities for change and renewal." *Playing for Time*, Lucy Neal, 2015.

As Neal's comment above suggests, there is an experiential quality that creative practice brings to projects which, at best, moves collaborators towards a democratic learning space and provides them with the opportunity to see differently. Such interventions can lead to new ways of *feeling* and *being* as well as *knowing*.

Distinguishing between academic research and creative practice, Niedderer and Roworth-Stokes suggest that creative practice produces is "work for any purpose other than the (deliberate) acquisition of knowledge" (2007), but it might be fairer to say that creative practice can generate new ontologies, while not systematically

articulating them as such. (IASDR2007, Kristina Niedderer and Seymour Roworth-Stokes, 2007).

What Neal's and others' work helps to make apparent is that, despite the many forms that arts and design practices can take, socially engaged creative practitioners working in and with communities have a range of approaches in common to provide ways of thinking and acting that change perspectives and increase awareness. However, while case studies abound, little work has brought together and interrogated the processes of transformation that run across creative practice in communities, the elements that are indispensable to making change and those that are more contingent on particular communities' circumstances.

Transformation

"We are gathering material and transforming it and, in so doing, transforming ourselves." (<http://justinemusk.com/2010/11/11/how-to-develop-a-creative-practice-and-why-it-actually-does-make-you-more-creative/>). A vision of ontological change – crudely, where we change what we are to change what we do - is articulated in different ways across different traditions, e.g. in terms of aesthetic response (Dewey 1934), affect (Deleuze 2005) and the political economy of enchantment (Bennett 2001).

Transformation is generally regarded to be more than superficial or incremental. It refers to major shifts: "profound and enduring systemic changes that typically involve social, cultural, technological, political, economic and environmental processes." [T2S]

Even within sustainability discussions, an argument rages about who/what is to be transformed, transformed from what to what, and by whom. Many assume that social and cultural transformations follow other (e.g. legislative) changes, but, in the absence of leaders ready to act, it may well be that bottom-up cultural change is required to strengthen other forms.

Transformation goes beyond adaptation to new conditions. Environmental geographer Karen O'Brien warns against the pursuit of adaptation as an accommodation of unwelcome change rather than consciously creating alternatives. She notes a scepticism that humans can introduce creative change, but describes it as essential, arguing for: "a changed sense of self, not as a passive subject to shifts in the climate system that are outside of one's control, but as an active player in the future of the community and world—all of which relate to worldviews, values, beliefs, and self-definitions. This includes individuals' personal capacities to be creative and innovative by thinking outside the box, to be reflective yet action-oriented as leaders, and to be internally resilient in the face of disruptive change." (O'Brien and Hochacka 2010) O'Brien further makes the point that it is "easier to argue for innovative thinking than to engage in it".

She calls for more integration in research: "new questions must be asked and bolder answers proposed, and – to make both possible – many of the barriers between disciplines and approaches must be addressed" (O'Brien 2012), since what is needed is "the recognition and integration of subjective and objective realities and multiple

types of knowledge, which depends on insights from the social sciences, humanities and natural sciences.” (ibid).

Transformation poses particular challenges for policy. “On the one hand transformation implies a need for policies that may challenge existing ways of doing things. On the other hand the abstract nature of concepts like transformation and resilience make it difficult for policy makers to put such concepts into practice.” (Transformations 2017: <http://www.transformations2017.org/about>). Indigenous knowledge scholar Sheehan (2011) points out that “Evidence must exhibit descriptive growth and flexibility because societies and cultures are fluid, dynamic processes, and causal factors are also shifting and changing. Planning for sustainable evidence means considering the extent to which the evidence represents the living and dynamic relations and tensions in the research context.”

Sustainability

The standard Brundtland (*Our Common Future*, 1987) definition of sustainability is “meeting present needs without compromising the ability of future generations to meet their own needs”. Climate change and related socio-ecological uncertainties require flexibility and resilience. The world’s use of 3 - 5 planets’ worth of resources annually dictates that a major part of sustainable living is learning to operate collectively within affordable limits and developing corrective socio-economic processes as well as developing better energy policies.

The RESTORE project points to different levels of ambition and argues for the second leading to the third (<http://www.eurestore.eu/>): *Limiting* damage caused; *Restoring* social & ecological systems to a healthy state; *Regenerative* or *Enabling* social & ecological systems to evolve. 2015’s Sustainable Development Goals (<https://sustainabledevelopment.un.org/topics/sustainabledevelopmentgoals>) point to 16 aspects in need of balance, including decent work, social equity and economic development, and a 17th that is “Partnership for the Goals”. Echoing O’Brien’s call, above, for approaches that cross boundaries, the Final Report of the T-AP (2015) calls sustainability “an encompassing term that covers a wide range of problems and disciplines, with an increasing demand for interactions between the social sciences, humanities and environmental science.”

Work is needed on social, cultural, economic and environmental aspects in concert to produce viable futures. Yet Stuedahl and Light (2017) argue that “a paradox lives at the heart of cultural responses to climate change: we know we need to change our cultures considerably to transition to more sustainable practices, but any specific end goal is rendered troubling as uncertainty increases.” At the same time, critical sustainability studies teach us that we must be aware of the colonial and patriarchal history of the last two hundred years. The consequence of this is that women, people of colour and indigenous peoples, for example, experience the lack of sustainability in more oppressive ways than white, male settler populations (Ferreira 2017).

Our Approach

Producing the material for this commentary was a collective work, conducted by a number of people at the overlap between sustainability and creative practice. Our group was chosen for their diverse backgrounds and extensive networks (from citizen science to theatre and art) by Light and Wolstenholme, who had collaborated before. The work was supported by a grant to cover travel and meeting costs from the Catalyst fund of the *Connected Communities* programme.

Our process was simple: to sample types of creative practice linked with sustainability, looking for commonalities. We did not attempt an exhaustive review. We put out calls to three communities to collect materials to review, supplementing this with our own connections. Our three main sources were:

- The Arts and Humanities Research Council (AHRC) *Connected Communities* programme, bringing in actors such as the two major projects funded under the 2012 environment call.
- The What Next? movement, sending out calls for practice examples via the What Next? Young Vic group (which includes representatives from across the arts, heritage and culture sector UK wide), the What Next? Climate Change sub-group and the What Next? Southwark group.
- The network brought together by an earlier AHRC project on a related theme, *Creative Resilience through Community Imaginings* (2013), such as Lucy Neal, Bridget McKenzie and Hilary Jennings, key British contributors to creative practice for sustainable ends who are also points of entry into further networks.

By appealing to these different groupings, we ensured some diversity of types of material. Our frame of reference was very wide: “We seek artwork, records of practice, books, papers, videos, notes, anecdotes – in fact, any account that can help us aggregate the creative contribution to transformative practice. However you work to make change - using socially engaged, visual, dramatic, imaginative or other means - we would be interested to hear. ... As indicated, we are taking a broad understanding of our terms, where “creative practice” can mean art, design, community development, etc. And “sustainability” can be social, economic, cultural or environmental, with an orientation to ecological and social justice.”

After a period of gathering examples, the team came together for a workshop and used an associative process to make connections across the many projects with which we had familiarized ourselves in previous weeks. Specifically, over sessions in the workshop, members of the group chose an example of practice and invited the others to listen to a description and then contribute with “And that made me think of...”. The team then brought up other projects to discuss until everyone had ceased to see any kind of connection. These chains of connection were then transcribed and analysed. In this way, we were able to identify themes across types of work and bring forms of creative practice into relation that might not immediately appear interconnected.

Before the end of the workshop, the themes that we had identified were coded, cross-checked with different members of the group for consistency of accounting, clustered and

more examples added as the categorization evoked new ideas for linkages. In this, we used a qualitative approach to coding and analysing themes (e.g. Saldaña 2009), performing a categorization of links. A long list of themes was streamlined into six: existence, meaning, connection, time, space, imagination.

If *to create* consists of making new combinations of associative elements that are useful (Mednick 1962), we were ourselves using a creative practice to find our patterns in the data. Our process brings to mind the musical term *riffing*. Like a piece of improvised music, one person riffed off the next until all ideas for common ground were exhausted. This formed the foundation for the sections detailing practice. During the workshop, we also constructed a structure for the commentary, a manifesto and the basis of other discursive sections.

Six Themes as Findings

In this section, we use six metaphysical and humanistic lenses to view transformative creative practice, giving examples to show the benefit of each way of considering it. Each shows a particular humanistic orientation to understanding creative practice as transformative. However, a successful transformative practice will resonate in multiple ways and could appear in several of these sections.

In fact, the more aspects of our experience of living that a practice can touch upon, the more likely it is to trigger a rethink and recommitment through a sense of feeling different, not just rationalizing a better approach. Becoming different to act differently is more powerful than change of activity at a behavioural level. In other words, adopting virtuous practices begins a process of reasoning so that one becomes the person with those virtuous practices, not so much the other way round. Different routes result in a changed sense of self and different people will respond more positively to different stimuli.

The projects below give a hint of different routes, but show how interrelated they are in considering creative practices as humans responding to other humans. Here we, nonetheless, characterize some approaches as a way of drawing attention to what makes them particular and unlike other forms of intervention.

Existence

One thing that creative practice can tackle in a unique way is the metaphysics of human existence and our relationship with life, death, loss, creation and other beings. While not all creative practice concerns itself with such philosophical fields, transformational aspects of creative practice engage at the level of *being* and help us question who we are and can become. This is often achieved experientially - so that such ontological questioning comes from a deeply inquisitive place inspired by a change of perspective. We become what we do. And our sense of futures matters here: 'perceiving [ourselves] to be living at the end of the world both has an impact on our ability to affect (what can we do?) and our ability to be affected (what matters?)' argues Fritsch (2018).

An example of this practice is Bridget McKenzie's *Remembrance for Lost Species*, which is an annual commitment to remember and mourn, now in its 7th year (<https://www.lostspeciesday.org/>). Started by a single artist and sustainability activist the activity has spread so that many different groups now mark the day in some fashion. Examples include ceremonies for the Great Auk (d.1844) and vigils for missing butterflies. In Brighton, paper flags inspired by Mexico's Day of the Dead were waved in a procession for the Caribbean Monk Seal (d.1952) and in 2014 there were a number of centenary memorials to the Passenger Pigeon (d.1914).

In this way, the ritual celebration has become a day akin to other, more formal, calendar events, encouraging those involved to acknowledge loss, feel sad or guilty or take an opportunity to renew their commitments to all the species still with us, spread the word, take action and develop creative and practical tools to make a difference.

In *Playing for Time: Making Art As If The World Matters* (2015), Neal looks at creative practice in a number of themed chapters including *Home: Belonging to the Earth*, examining creative work that explores the idea of the earth being our home and what home means (belonging, an antidote to fragmentation, etc). She also provides a chapter headed *Rites of Passage - Seeding New Mythologies*, looking at how we mark the changes and transitions in our lives: "the celebration of new beginnings and endings could become a shared community practice, in which we rehearse how to be resilient in the face of adversity.... These reinventions of ceremony create an intimacy with death that resists mainstream culture and aspects of medical practice." (Neal, *Playing for Time*, 2015)

Meaning

Value in existing is another cultural construct that is served well by creative practice. The affective dimensions of relationships, what we notice, where we put our effort and how we build coherence for ourselves and situate ourselves within the world we encounter are all matters that can be noted - and changed - by reflection. Meaning is crucial to motivation and a small shift in sense-making can alter behaviour more dramatically than any amount of manoeuvring at behavioural level. Changes in the meaning we attribute to things and relations can be performed through disruptive interventions but more often take time and commitment from dedicated practitioners. Although Grossberg (2006) speaks about things "mattering" in the context of rock fans, some behaviours he identifies – of caring; justifying this concern through its own value to the individual; the rewards to be received from this investment and patterns of extension from new networks to new ideas and associations - tie in with how we might approach the living world and develop it as committed citizens with engaged hearts and minds.

Approaches do not necessarily need to involve direct engagement with people, as the example of Deeming dancing demonstrates.

Kate Deeming danced in the same place at the same time each day for 484 days (<http://www.deemingdreaming.com/about-1>). At first she was considered an oddity. Then she became essential to the space and people joined her. She also invested the place she was dancing with new meaning. It became notable as more than an undesirable street in an unimpressive part of Glasgow. Local people had a notable phenomenon to own and feel proud of. Repetition and duration was a key part of this. One dance might have been interesting to the cognoscenti. This recognizable and predictable event affected the whole area through its continual repetition, as the value to the artist became a value for the whole locale. Individuals can gain a similar effect by drawing/writing about something over and over until it occupies a different relation in their lives, even if there are only small differences in the individual images/words on each occasion. Hallam and Ingold (2007 p.17) point out how the ability of artists in the pre-industrial era was measured “not in terms of invention, as today” but by their repeated “capacity to combine traditional motifs in new and challenging ways” over time.

The Transition Movement (<https://transitionnetwork.org/about-the-movement/what-is-transition/inner/>) now also has *Inner Transition* to create a culture that supports a balance between inner and outer change. *Inner Transition* is an exploration of the processes and phenomena going on within ourselves that shape how to do Transition. The nature of our relationship with our inner life determines how able we are to make the practical lifestyle, relational and cultural changes needed for Transition – as well as bringing depth, texture and meaning into everyday life. *Inner Transition* supports the choice of healthier, more resilient, connected and caring ways of being and acting in the world and experiencing inseparability and interdependence in the world.

This systemic approach highlights how the success of the Transition Movement – and the human species – seems contingent on us cultivating what Sophy Banks, *Inner Transition* pioneer, calls Healthy Human Culture and what Looby MacNamara and Jon Young have called Cultural Emergence – where abundance, gratitude, care and connection are part of our everyday culture and which supports to us to understand how the process of change happens and to feel happier with less.

Connection

Being in the world together, among other living beings, is a profound part of what constitutes us as individuals. The basis of ecological citizenship is to be in balance with other life forms; it is an intrinsically relational quality. Considerable creative work takes relationships as a starting point and uses this to explore sustainability as a social issue.

The Craftivist Collective has published a book (Sarah Corbett, *How to Be a Craftivist*, 2017) that addresses gentle action for change. It suggests that: “In today's world it's easy to feel helpless, but here is a book to initiate debates rather than shouting matches, to enable collaboration in place of confrontation. Gentleness can be a

great strength, and quiet action can sometimes speak as powerfully amid the noise as the loudest voice. And if we want a world that is beautiful, kind and fair... shouldn't our activism be beautiful, kind and fair?"

Artist In Residence in My Own Street (<https://debdavemason.com/2016/02/03/an-experiment-at-home/>) – is the work of Deborah Mason, an artist and cultural and environmental activist. She has, since January 2016, been artist in residence in her own street. The project started as a way of bringing people together to find out what was important to them and also as an experiment with the idea of whether close attention to something creates greater empathy and care. Learning herself about the street (both its present and past) and sharing it with others, she hoped to draw attention to it as a place in itself - not just 'home'. As well as drawing the dwellings in the street, researching their history and annotating each house with information about former (and some current) occupants, Deborah held drop in nights at the local pub each month giving an opportunity for neighbours, who might be strangers, to come with a purpose, but not one that impeded random conversation and connection.

Time

Time horizons are critical in how we think and plan for sustainability yet both politics and commerce are mired in short-term cycles. 'Our decades-long research and personal involvement with aspects of temporal perspective have convinced us that there are few other psychological variables capable of exerting such a powerful and pervasive impact on the behaviour of individuals and the activities of societies.' say Zimbardo and Boyd (1999). Their work points to the importance of a thinking with a future orientation in dealing with challenges, rather than being stuck in a hedonistic present or perfect past. It could be adopted here as a way of understanding why playing with time works well for some, less well for others. Moreover, Pantzar and Shove (2010) have described the ways in which daily practices (such as commuting and shower) condition and are conditioned by temporal orders of daily life and make up more or less sustainable consumption patterns.

The Museums of the FutureNow (MotFN) is an evolving artwork and participatory process containing both research and innovative public enquiry that exists at the intersection of futures research and storytelling. The project is a collaboration between public artists Robbie Coleman and Jo Hodges and Professor Mike Bonaventura of the Crichton Carbon Centre (<https://museumsofthefuturenow.wordpress.com>).

Developed originally during a Creative Futures project that was concerned with the complexities of food production, *The Museums* are evolving a process to engage people in social imaginings, enabling an exploration of the web of factors that create complex challenges for society and environment. By providing an object from a museum situated in the future, a place, a time and a driver and asking participants

to generate their provenance and social significance, *The Museums* develop ideas about possible futures and enable the sharing of those futures through story telling. Instead of dismissing possible futures because of their improbability, the creation of scenarios allows alternative perspectives to emerge.

This work appropriates the classic forms, iconographies and language of the museum, however this is not to present a fixed version of history but to show that the past (and the future) is fluid. There are an infinite number of possible futures that coexist in the conditions of today that we need to speculate upon to release.

Although the project creates fictions, it is designed to work with real world issues. The speculative data set created represents the other side of this circular project, a research programme examining the hidden psychologies of our social world, if *The Museum* process itself explores and represents the social imagination, then the research mines the social subconscious. The project stems from an interest in using speculative futures and design fiction as creative tools. These forms of research reveal new metaphors, processes and strategies to explore the world.

All the scenarios/ stories generated via participatory *Museums* will eventually be encapsulated into a stand alone installation; *The Museum of the FutureNow*, an exhibition of the social imagination.

Space

Spatial aspects of sustainability and community life are a popular part of the creative practice toolkit, with mapping of everything from places of significance, to waterways to emotional touchpoints.

Square Go was a project by The Stove in Dumfries that brought together a group of artists, designers, architects and planners from *The Stove Network* and the local area to stage a series of interconnected events under the collective banner of *Square Go*. The centrepiece of *Square Go* was a two-day public workshop on Fountain Square outside The Stove which invited local people to engage in conversation on topics relating to the future of the town and then add these ideas to a giant map of Dumfries drawn out on the paving of the square.

It was one activity in a decades-long engagement in developing space meaningfully for the residents of areas with struggling town centres.

Imagination

Perhaps the most remarkable quality of humankind is the power to dream and imagine how things might be different. We are not locked into the current moment, but can recall other situations and extrapolate into new ones. Whole emancipation programmes have been built around this quality, such as Augusto Boal's *Theatre of the Oppressed*, which encourages

people to take over the action on stage and rehearse the changes they want to see before using this extra confidence and wisdom as part of enacting the changes for real.

One characteristic of how our minds appear to be formed is that our imagination is more concrete for past events (even if the act of remembering is itself a creative process) and more indistinct for future speculations. This means that situating change as having happened, rather than in the future, makes for more detailed and convincing ideas of what can be achieved.

On Some Other World is a creative workshop designed to inspire participants with a sense of how things could have developed differently and that they still could. It uses the Counter-Factual Worlds Generator to provide the stimulus for new perspectives and avenues of enquiry, asking what publics are, were and could be through a series of exercises that take people back to old worlds and forward to ones that we hope for or dread.

Through a process of Worlding, Chronicling, and Creating, participants use the idea of a world different to our own in one major historical detail to explore values and choices. The idea of embedding oneself in a speculative present makes ideas more real, more visceral, both less dystopian and less utopian. It simultaneously frees the proposed innovations from the constraints of current innovations and current trends, so it is not just a rehash or iteration of existing design ideas, trends or apps. This freedom also allows for exploration of inventions, trends, and ideas that we might want to guard ourselves against rather than exploit, but in a way that still gives space for future exploration of possible positive applications (for example DNA modification; or the use of digital to create 'wonder'). The mix of history and imagination that results from a counterfactual world proposal can be both playful and deeply challenging at the same time. The last stage of the workshop - when people come together to share the different worlds they have created, reflect on them and discuss them as a wider group - is critical for turning a creative exercise into an encounter that has real-world potential as the use of imagination shifts focus from the overtly imaginative to extrapolating lessons and recognising other ways of thinking.

From Citizen Science to Public Science

During the past decade, increasing numbers of tools and programmes have sought to engage lay people in science work, recording and understanding phenomena in the environment and/or sending data to experts for analysis. With this, the term 'citizen science' has become the rallying cry for a new breed of science communication. However, these institutionally-led outreach initiatives have generally continued to follow the methodology of traditional natural science, rather than embrace the humanities. They analyse problems within a simple hypothesis-testing paradigm. Those designing citizen science initiatives are largely unaware of the critical work around scientific knowledge, with the tensions of knowledge and power this highlights. There is usually a simple division between 'researchers' (professional experts) and 'citizens' (non-experts), while data flows to the centre, for use by these experts, and is never seen again by its contributors.

Pioneered by María Elena Torre, 'Public Science' has recently emerged as alternative approach that takes Ferreira's ideas seriously, using participatory action research. *The Public Science Project* (<http://publicscienceproject.org>) that she co-founded refuses to side-step the question of who is in control of the research process. This issue has become particularly fraught as the politics of climate science changes. With the White House having begun dismantling the US Environmental Protection Agency, large corporations now see citizen scientists working with environmental NGOs as a last obstacle to their version of the story (Rodriguez and Walton 2018). Using a more inclusive and creative way of understanding science contributes more opportunity for initiative by participants and more ownership of results. The science becomes exploratory and relevant to the problems to be found round those involved. Carl DiSalvo's work on sensing and citizen participation falls into this category too (e.g. 2017) as does Extreme Citizen Science (<http://www.ucl.ac.uk/excites>). This work encourages the traditional values of experimentation and rigour, without inhibiting the imagination of the participants to investigate the natural world in new ways and ask new questions.

Some Major AHRC *Connected Communities* (AHRC-CC) Projects on Sustainability

As part of our Catalyst funding, we are particularly reviewing how AHRC's *Connected Communities* projects addressed creative practice in the context of sustainability work. In 2013, the AHRC directly addressed the theme of environment/sustainability with a *Connected Communities* sandpit (a workshop that academic and community researchers competed to attend). The research council then gave research seed funding to a number of the teams formed at this event and followed this with two major grants. The two major projects are described below, as is another project that used imagination as a starting point, followed by a small sample of further AHRC-funded projects that focus on transformations to sustainability.

An emphasis on community concerns and social cohesion weaves through the *Connected Communities* programme, pointing up the relation between environmental justice and the participatory processes used to engage different parts of society. The results were particularly suited to managing social aspects of sustainability. It also reflects the intense, focused nature of engaging communities in a meaningful way. Much of it relies for impact on intimacy, engagement and sensitivity to situation.

Towards Hydrocitizenship: Connecting communities with and through responses to interdependent, multiple water issues (2014-17)

The *Towards Hydrocitizenship* project had three main aims:

1. To investigate how local communities are embedded in the hydrosphere (the totality of interconnected water forms, cycles, systems, issues, conflicts), and using arts and

humanities-centred interdisciplinary research (AHIR), to explore and develop community resilience and well-being in relation to water related issues in eco-social terms.

2. To interrogate a series of questions about communities, citizenship, rights and conflicts. Interconnecting water issues offer powerful exemplars of connections within communities (e.g. shared flood risk, shared water assets); and connections between human (and non-human) communities (e.g. upstream-downstream communities in catchments, supply and waste systems).

3. To develop innovative AHIR co-working procedures and show how they can play a part in reshaping eco-social formations in particular contexts, by enabling participating groups and individuals to reflect creatively on how they imagine and practise their relationships with the water environment and with their various neighbours (human/non-human).

A subsidiary aim was to develop exemplary practices for co-productive working between communities, academics, creative practitioners and governance actors; using AHIR to address the challenges posed by environmental change; and the development of sustainable eco-social practices.

Our overall findings in relation to these aims are as follows.

The actualities of local and regional eco-social hydrospheres are remarkably varied in physical, cultural, political and technical terms. There is great environmental, social and cultural depth to local water-community relations in historical and contemporary terms. There is an appetite for addressing water issues at the moment. This is related to many projects, initiatives, recent films, and books published about water that we encountered and combined within our project.

Arts and humanities approaches when combined with social and physical sciences do present opportunities to begin to make visible and 'narrate' these histories in ways which can build upon local initiatives and interests; engage local citizens and local stakeholders; and present alternative themes and futures within those co-workings, narratives and engagements. In all four case studies we found:

- a) a series of pressing local water challenges which span from flood risk, pollution, and access to water as amenity, water and well-being, water and nature/biodiversity conservation.
- b) a rich set of watery stories and histories relating to different *kinds and bodies* of water in a locality (both urban and rural)
- c) evidence that many local groups, artists and citizens were aware of, concerned about, and active in, one or another aspect of local water politics.
- d) that these interests can be enhanced by co-production of research and activities which, in turn, can join up partial (either in terms of locale and/or issue/opportunity) narratives and actions into more holistic engagements with local hydrospheres which are of cultural,

ecological, and physical, technological importance, and connected to large scales of concern and interaction.

In relation to Aim Two, we found that working in a co-production spirit with local groups, artists and activists can be mutually beneficial to both the academic team and the partners in so far as both sets of expectations, ambitions and narratives are expanded, and in some cases, challenged.

A key finding (shared with other Connected Communities projects and much more widely beyond that) is that narrative, story-based work, is a very powerful way of engaging people. Developing stories involves processes of finding (from a multiplicity of sources), embellishing, challenging, joining-up, and sharing, and then disseminating these enhanced co-created narratives into what we term the ecology of narratives in a local area. Forms of collective creativity based on this kind hold great promise for engendering community energy and impact in relation to a given issue.

There is a need for co-produced work to be open access, emergent, opportunistic, set in a positive-critical-creative framing.

The challenges of getting these narratives ‘heard’ in the wider weave of ecologies of narrative that dominate contemporary culture remain significant. Using skilled, eye-catching work by established performers and artists is a good way of doing this. Long-term relationships between artists, practitioners, researchers and community groups are very helpful. The use of humour, music, (animated) film, unusual locations for events, walking events, an ecology of social media, extra partnerships, grafting onto large events (e.g. local festivals) helps reach audiences and extra interested parties. All these, in combination, have potential for ‘cutting through the noise’ of everyday life as one community partner put it.

There remain significant challenges in doing this kind of multi-partner, open-ended emergent research, for large research teams with differing disciplinary backgrounds. We have a large number of non-academic partners active in this large AHRC-CC project. These include community organisations, third sector organisations, government agencies and private sector organisations. Many of these have explicitly stated the project is having an impact on their thinking and practice. This is evidenced in various outputs. The project has produced a whole range of co-produced output. Many of these were events, but there are legacies of films, publications, drawings, murals, maps, physical structures in the landscape, (see <https://www.hydrocitizenship.com/project-output.html>)

One strand of the project that captures much of the above is an initiative in the Bristol Case Study ‘Water City Bristol’. This involved the academic team working with artist Luci Gorell Barnes and Helen Adshead (community enabler) on a series of workshops, seeking to explore the ‘hidden waterways’ of South Bristol, working in schools, community centres and other locations (even a local hair dressing salon). This work is now captured in

a series of documents, drawings and maps on the project website at
<https://www.watercitybristol.org/hidden-rivers-and-daylighting.html>.

Owain Jones, Principal Investigator

Stories of change: Exploring energy and community in the past, present and future (2014-18)

Project leader Joe Smith conceived of the *Stories of Change* project (www.storiesofchange.ac.uk) to address stalled public and political conversations about energy by looking freshly at its past, present and future. This project used story-telling as a means of engagement, here with energy issues. It drew on history, literature, social and policy research and the arts to encourage a more imaginative approach to current and future energy choices. The project team recognizes that many people have begun to feel disengaged, disempowered or actively hostile to the changes to the UK's energy system required to meet the targets embedded in the latest legislation. The project sought to make space to work through areas of concern and explore elements of a collective vision. After three years of work, the project produced a colourful summary book, *Energetic* (issuu.com/energeticbook/docs/energeticv09sp), to serve as a catalogue of events, rather like that for an exhibition. The book is presented with a lively design, assembling many short articles written by participants in the project. There are also poems, autobiographical and historical pieces to set the work in context. (A similar approach of aggregating multiple voices and short pieces is taken to looking at the challenges of social activism in service of sustainability, Light 2014, suggesting this pluralistic style is itself an appealing way of presenting community-generated campaigning work.)

The strong visual element to the project is captured in the snapshots in "Pessimism: The Album" (www.flickr.com/photos/storiesofchange/sets/72157669496050659/), a wry comment on the challenges that have to be acknowledged in attempting to make change. Most of the people featured are worried that nothing will happen despite the need to act now. In looking at people with these concerns, the reader feels empathy or wonders what would be their own thought bubble. We can surmise that the act of being included in the album was impactful for the participants, fostering a sense of urgency.

In the main project, there are three major themes: Demanding Times, Future Works, and Everyday Lives. Each theme blends reports of activities involving a range of people, with different approaches to eliciting stories and participant memories, and more specialist essays. As described in the evidencing section, the project found storytelling to be a particularly effective way of engaging the general public and raising awareness of the need to consider energy and material demand. *My Friend Jules* was an online game, creative writing stimulus and live workshop used to inspire thought on the subject of our personal relationship with energy. It deliberately avoided the tone of energy conservation literature: 'It's unusual and perhaps counterintuitive to think of fun as being the core ingredient of a serious dialogue. But to a game designer, fun is the core that's necessary to build a successful engine – it's the basis for a good invitation to play and the common ground that makes the play engaging and meaningful. As we look to integrate science more fully into our daily discourse and into policy, it's worth considering how fun and games can contribute to a more holistic approach and a more inclusive, humanised outcome'. (Ken Eklund, *Energetic* 2018).

Some of the same team have also been involved in commissioning work on scenarios from artists (cultureandclimatechange.co.uk/projects/#scenarios-sixteen). The trio of appointed artists have all, in different ways, sought to apply their creative practice to supporting thinking about environmental futures in the present and motivating people to act. Their

only requirement has been to produce monthly reports of their work and so the team has gathered significant diary pieces over the course of a year. “All the artists really thrived on and valued this trust and freedom and if anything that resulted in them greatly over producing! All of the work was about engaging with climate scenarios ‘as researchers’ not observers of research.” (Joe Smith, pers comm.) The team speculates that the networked residency model they initiated may prove to be a more important innovation than the climate scenarios work itself in terms of the impact of the project, in harnessing the power of connecting. Meanwhile, Svendsen, a theatre maker, is running a one-week public residency at the Barbican Pit in Sept 2018 developing her piece on what a sustainable economy will be like to live in.

Running alongside these initiatives, the *Earth in Vision* project (<https://earthinvision.org>) uses the BBC archives to have an impact. This is a website with clips from across 60 years of BBC broadcasting about the environment that have been cleared for people to rework and share. It also features some 20 interviews with producers and filmmakers. Smith says ‘The moves we’ve made with the idea of clearing clips for reworking is explicitly about supporting people to own the environmental story and tell it in their own way.’ (pers comm.).

Imagine – Connecting Communities through Research (2013-17)

Imagine (www.imaginecommunity.org.uk) was a five-year project that finished in December 2017. The project brought together universities and their local communities to uncover knowledge and imagine better futures. Project leader Kate Pahl explored how arts methodologies might be incorporated into research, working with visual, poetic or embodied ways of researching to open up research methods beyond the interview, focus group and questionnaire and draw on situated, experiential knowledge. A particular example from the five years is the *Imagine Hillfields* project led by Warwick University, taking place in Hillfields, Coventry, the site of the first Community Development Project in 1970 and site of multiple regeneration interventions since then. The team looked at how the various parties with an interest in Hillfields had imagined the future of the area over the years, and how this vision led them to take the decisions they did, going back to the 1970s. The insights offer ‘an understanding of the past as shaped by community action and policy direction and the tensions and harmony therein’ (www.imaginecommunity.org.uk/imagine-hillfields-podcast-imagining-the-past-and-future-of-community).

Angie Hart, who co-led *Imagine*, works long-term on the theme of resilience with her BoingBoing team, through the lens of coproduction – from energy resilience to looking at young people’s welfare to drought in South Africa. *Imagine* resulted in a series of creative outputs, such as co-produced tools and games, a “Boingboing hits the Road” video and a highly-illustrated book led by young people in care. ‘We co-design, co-produce and co-deliver everything we do.’ (<http://www.boingboing.org.uk/about-us/work-co-production-cops/>). Much of the sustainability being addressed in this work is social and economic as well as directly linked to environmental issues, but the team show how these aspects underpin a rich ecological engagement. Their concept of resilience is informed by that of developmental psychologist Ann Masten: ‘She describes resilience as ‘Ordinary Magic’, meaning that in many cases, a resilient outcome doesn’t come about as a result of something particularly earth shattering happening, it’s just everyday stuff Masten

describes it as: ‘Positive adaptation to adversity despite serious threats to adaptation or development’.’ (<http://www.boingboing.org.uk/resilience/definitions-resilience/>)

Giving evidence to the *Select Committee on Citizenship and Civic Engagement* in 2017, the *Imagine* leadership suggests that ‘The creative arts can be a powerful mode of civic engagement. We have found the arts to be an effective way to engage the voices of marginalized women and girls by bringing them into research through artistic approaches, such as poetry, art, photography and drama. One example of this is the ‘Threads of Time’ project, based in Rotherham. It explored minority ethnic girls’ identity and their understanding of citizenship linked to place, culture, faith, history and tradition, and examined what it means to be British. ... Poetry and visual images for us ‘count’ as evidence of how young people imagine their futures to be.’ They conclude that ‘Funding should be made available for open ended, experimental projects that make use of creative arts and a multiplicity of methodologies to encourage dialectical thinking. This can include groups researching hidden histories, artistic and visual understandings of engagement, including poetry, visual and relational art and approaches that rest on creating spaces for dialogue and communities of practice.’

Summing up an evaluation project, *Taking Yourself Seriously* (Feb 2017-Jan 2018), which ran at the end of *Imagine* with the specific purpose of looking at the value of arts methodology in community cohesion, Pahl talks of how ‘using arts-based approaches to build social cohesion creates an opportunity to see social cohesion from alternative perspectives, to have conversations that sit outside of formal community development or academia but in a space where creativity is nurtured and conflicted conversations encouraged.’ Key to these findings is the recognition that arts methodologies are complex, integrated and emotional. ‘The arts offer a way of seeing what might not always be visible. The quality of arts-based research lies in the process of its creation: the creation of social questions which offer a deeper source of understanding.’ While not addressing sustainability in an environmental sense, all the points in the summary document (arvac.org.uk/wp-content/uploads/2018/01/ARVAC-key-findings.pdf) are pertinent to working with creative practice as a central tenet and encouraging transformations towards a more cohesive society.

A wide range of shorter projects were also identified as sustainability-themed. A full list of these can be found at: <https://connected-communities.org/index.php/cluster/environment-sustainability>. The following sample gives a sense of the diversity of approach and ambitions.

Fields of Green: Addressing sustainability and climate change through music festival communities (2015 – 16)

Led by Matt Brennan, *Fields of Green* was an AHRC-funded research project exploring the sustainability of Scotland’s music festivals through the eyes of artists, audiences and festival organisers, addressing climate change through music festival communities and exploring these festivals’ capacity to enable ‘greener’ audience behaviours within the temporary communities formed during such events. The project worked to lay the foundations for a future community of practice of music festival organisers and artists working together towards a greener Scotland. Alongside this, the research team worked with a number of

Scotland-based singer-songwriters to explore themes of travel and sustainability within individual artists' lives and practices. Songs devised by artists were recorded and launched at a festival in February 2016. (<http://www.creativecarbonscotland.com/project/fields-of-green/>)

Telling the Bees (2015 – 16)

Project leader Deborah Maxwell writes that beekeeping is currently experiencing a surge of popularity, coinciding with a rise of localism and a consumer drive for homemade produce. At the same time, bees have become popular subjects of non-fiction prose, literature, poetry and art, in part because their plight has become emblematic of contemporary environmental crises. The project worked to recodify and repackage beekeeping knowledge into 'future folklore', prototyping experimental forms, while exploring how far existing practices can still be regarded as traditional ecological knowledge. (<http://www.bees.eca.ed.ac.uk/>)

Bridging Environmental Values (2013 – 14)

Steve Cinderby led a project asking what behaviour that benefits the environment means to people. The project team was particularly interested in whether messages received in one location, such as work, were taken to other settings such as home or social spaces such as sports clubs. Did the messages and behaviour patterns stick to the person or the place? The project was undertaken as action research, using a mixture of participatory and creative methods to produce a outputs on these topics. The information and artefacts participants generated were also used by community artists in York and Dundee to illustrate and further communicate the project findings. (<https://connected-communities.org/index.php/project/bridging-environmental-values/>)

The Social World of Nottingham's Historic Green Spaces: A community history project (2013 – 14)

Led by John Beckett and working with friends groups, local history groups and other volunteers, the project stayed focused on one location, investigating the development of Nottingham's Arboretum, Forest Recreation Ground, Church and General Cemeteries, several public walks and other green spaces created following the 1845 Enclosure Act. Topics included the changing planting scheme, how the space has been used over time, and the effect of later urban development proposals, many of which were successfully opposed by local community members. (<http://www.ng-spaces.org.uk/about-us/>)

Participation's "Others": A Cartography of Creative Listening Practices (2014 – 15)

Julian Brigstocke and team asked how participatory research might be extended to become better able to 'listen' to voices that do not fall within the boundaries of the traditional individual human subject, such as past and future generations, non-human life, radically decentred minds, and objects and technologies. They started with recognition that

addressing the mounting ecological problems facing environmental, social and mental life requires challenging the place occupied by the individual living human subject as the paradigmatic form of political and artistic agency and built an international network of expertise to help challenge anthropocentric assumptions about the stakeholders of participatory research. The project established a multimedia cartography of diverse projects that share the problem of how to involve agents who do not possess an ordinary 'voice' in participatory democratic processes and how to establish legitimate forms of authority to translate and speak 'for' these actors.

(<http://www.authorityresearch.net/participations-non-human-and-non-living-others.html>)

Webs of Connection (2012 - 2014)

A community organisation based in South London, RefugeeYouth used participatory action research approaches, with creative practices at their heart, to connect young people from refugee and migrant backgrounds to the rural environment, in collaboration with the National Trust and Bransdale, a seventeenth century water mill. Over three years, hundreds of young people from inner city areas across England used visual art, performance and storytelling to connect with local farming families and the landscapes of the North Yorkshire Moors. They reflected critically on issues of power that arise when grassroots practitioners interact with those regarded as professionals, particularly those based in universities (People's Knowledge Editorial Collective, 2016). Transformed by the experiences, the young people formed two new organisations and are building on the lessons learnt in Bransdale in the new contexts of Hull and North West London.

<https://www.youtube.com/watch?v=O6OOwirl2Zk>

Connection, Participation and Empowerment in Community-Based Research: The case of the transition movement (2012 – 2013)

Rachel Pain and team addressed the work of the Transition Network through network members' experience of fielding interest from researchers. The project documented experiences of Transition groups and researchers involved in research collaborations, created draft guidelines for Transition research (a Transition Research Primer came out of the work), and initiated a broader project on supporting Transition groups to devise appropriate methods for monitoring and evaluation, the ESRC-funded *Monitoring and Evaluation for Sustainable Communities*. Some of the original project team then worked with UK-based Transition initiatives, local energy groups, and low carbon community groups to trial selected monitoring and evaluation resources and tools over a six-month period in 2014, which are now available on the Transition Network website (<https://transitionnetwork.org/wp-content/uploads/2016/09/Monitoring-and-evaluation-guide.pdf>). These guidelines are not especially directed to the evaluation of creative practice techniques, being designed to have maximum relevance in assessing change in the context of generic low carbon/community energy movements.

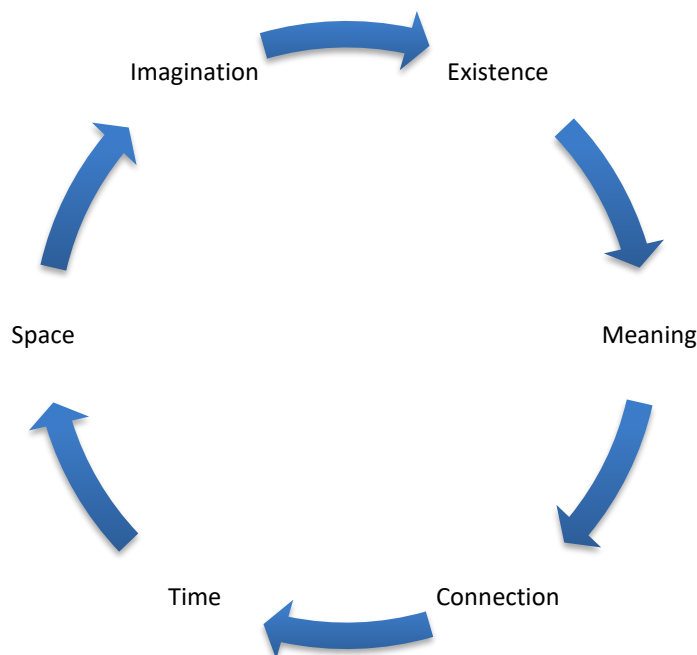
(<http://www.transitionresearchnetwork.org/connected-communities.html>)

AHRC-CC and Creative Practice for Transformations to Sustainability

Our exploration of funded research on sustainability issues suggests that AHRC-CC projects used creative practice in all the ways mentioned earlier: illustrative, responsive, practical and transformative. For instance, in the *Hydrocitizenship* project, a video presents current ecological thinking in a form relevant for the local context; a poet reads a work that is inspired by the water theme at an evening for Bristol residents; posters and the website promote events; young and old people come together to make maps of the waterways around them. All four activities use creative practices of one kind or another, but the one most likely to be *transformative*, in other words, to have a significant affective, political or spiritual impact on self and others, is the one where everyone is making and learning together in such a way that something new and profound is revealed to them.

The same pattern can be seen in the revelatory activities of engaging people in rethinking energy in the *Stories* project. And other projects will have been more or less successful at transformation, depending on their orientation to engaging people in speculating and experiencing, as opposed to traditional knowledge creation. It is notable that both Smith and Jones point to this learning for themselves as leaders in reflecting on what their work has achieved, and a similar thread runs through Pahl's comments.

It is also possible to trace the use of the six big themes (existence, meaning, connection, time, space and imagination) in all the work. As noted, these themes cannot be wholly teased apart; instead, we encourage thinking about them in terms of building impact by touching all bases and using approaches that are suited to do so. This provides a good start to building interventions that are engaging and transforming and helps ensure things stay locally-relevant and context-specific.



A common means of performing this engagement work is to run (series of) workshops. This is so taken for granted that it needs a moment's reflection. While highly varied in content, structure and facilitation style, workshoping provides a method of engagement that brings people to learn from each other, allows ideas to be discussed and worked through, offers a safe structure for self-discovery and can be led by multiple facilitators of different experience and focus, offering development opportunities for leaders as well as other participants. Workshops run best on a balance between direction and suggestion, tuned for the

group in hand, and can embrace all the themes identified to be of value in creating transformative work.

No two workshops are ever the same, despite the same material. All share the unfortunate characteristics of being labour intensive and somewhat unpredictable. That said, workshops are a format that allows for future-making in a sufficiently open-ended way. They can be conducted outside, through walking and talking, through land art or learning craft skills. They can be in places and buildings of relevance to the theme, such as to show sustainable lifestyles being lost or made. When done well, they can be very effective at transformation, especially when linked together with other activities that consolidate ideas and move these connections into shifts in practice.

This is not the only way that transformational work can take place: the projects suggest that writing stories is another process with value to the participants beyond the material generated. And there are many others in use, both within the Connected Communities programme and beyond it.

Evidencing and Evaluating the Change Process

A key problem for creative practitioners (and the arts and humanities as a whole) lies in evidencing claims of impact in a form that other professions and disciplines can respond to. Partly, this reflects a prevalent unwillingness to perform what is seen from within the practice as reductive (instrumentalist) analysis of a process that may be highly idiosyncratic, personal or context-specific. Partly it reflects that methods like workshoping do not lead to specified and quantifiable outcomes in the way that other research mechanisms, such as surveys, do.

An emphasis on making and managing transformation suggests that we need to evaluate change processes, rather than predicted outcomes. Any process of transformation towards sustainability (T2S) involves addressing relationships, power structures, attitudes and practices, often instead of more familiar goals. Mainstream monitoring and evaluation approaches do not serve the types of change processes discussed here.

The following are some key questions across which evaluation processes can differ and all of these need attention in exploring creative practice as a medium of transformative change:

- What is judged as evidence? What is success?
- Over what time frame and range of stakeholders can/should success be judged?
- Who decides on criteria for evaluation?
- How can evaluation value risk-taking and related implications for creative practice?
- What process can we use to value journeys with common characteristics rather than specific outcomes (or even types of outcome)? How do we account for emergence?
- How can evidencing be expressed so that other professional groups understand its value (in this case, particularly, policymakers, climate scientists)?

As a way of prompting thinking on these matters, we give two examples of detailed analysis that shows transformative impact without recourse to quantitative reduction. (Further reading on each is provided at the end.)

Democratising Technology (AHRC/EPSRC 2007 - 08)

The *Democratising Technology* (DemTech) project used arts methodology to involve people disenfranchised by lack of knowledge, opportunity and confidence in decisions about future technology. The team devoted considerable energy to devising evaluation procedures to capture its impact. Its initial goal to engage older people in conceptualizing novel technology was successful. An emergent factor was that the project also led to a 10+-year initiative by participants to build a novel water turbine design. A turbine was launched in the Thames in 2013. The turbine was followed by a floating, pollution-busting waterwheel on the Lea River, in 2017. The project's potential for making transformation, then, was realized in multiple ways, based in transforming attitudes and sense of self.

The project identified several aspects as necessary to participate in making change and worked to equip groups with all of them at various points:

- 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, such as: old and new, people and things, etc.
- Transformation – the act of combining to make new ideas, concepts and associations (Light et al 2009).

To do this, *DemTech* included performance methods; values workshops; an exhibition in a public gallery; negotiating group interests through a social change project; a follow-up project with a socially-engaged artist to develop the group's response; further support for action.

The evaluation that was conducted had many dimensions:

- 1) exercises before and after the run of workshops to ascertain whether new meaning had been instilled by participation;
- 2) discourse analysis of all exchanges with participants;
- 3) comparison between the practices of four different types of artist interested in social engagement and cultural change;
- 4) long-term monitoring of participants' continuing journeys.

Further reading:

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Stories of Change (AHRC-CC, 2014 - 2018)

Telling Stories

"Our experience suggests that listening to and telling stories can play a powerful role in energising engagement in policy issues that are important, but also complex and at first glance uninviting. The approaches we have taken have drawn variously on fun, memory, emotion and connection to place, family, friends or work in order to expand the terrain of public conversations about energy systems change. These devices have been deployed alongside very targeted invitations to participate and/or painstaking relationship building. ... we have also noted that these playful approaches have also helped to address jadedness amongst the 'engaged'. Furthermore, these processes of gathering, supporting and sharing stories have also nourished a much more fluid and interdependent notion of the relations between 'past, present and future' in a way that seems not just apt but vital in the context of the distinctive cultural politics of climate change.

One of the things that can be traced across the very varied practice and content generated by the *Stories* project (see also the AHRC section) is that the approach can generate a shared understanding amongst participants that change in energy systems is a constant, and that it can be engaged with and influenced, for good or ill. ... The stories generated have regularly placed prominent emphasis upon the difficulty of 'seeing' energy. This in turn makes it difficult to treasure it, and hence gives license to profligacy. ... the playfulness of the design of the utopian activities described has found that imaginative modes of interaction or intervention can make it possible or even easy for them to 'see' energy, or rather to perceive its presence, and in turn to 'take more care' of it. There are many instances where participants have been able to 'envisage' and envision energy in a way that is a counterpoint to their 'normal' understanding of energy in their

everyday lives or society more widely.

The ‘serious play’, undertaken through the generation, listening to and sharing of stories of varied forms can support better foundations for participation in complex problem solving by much wider constituencies. It can also mix these constituencies up in productive ways. ... Our experience suggests that it is not so much that stories in themselves drive transformations. Rather we propose that stories have the capacity to invite many more constituencies to engage in imagining change and consequently offer both the motive and confidence to participate in it.”

Extract from: Joe Smith, Robert Butler, Rosie Day, Hamish Fyfe, Axel Goodbody, David Llewellyn, Mel Rohse, Bradon Smith, Renata Tyszczyk, Julia Udall, Nicola Whyte (2017), Gathering around stories: Interdisciplinary experiments in support of energy system transitions, Energy Research & Social Science.

Television’s Role

“The first requirement for more impactful storytelling about climate change is a spirit of creative entrepreneurship. New phrases, images and arguments (or repurposing of old ones) are required. And a testing of these - sometimes rigorous, and sometimes playful and experimental, will be needed too. It is helpful to note that this kind of productive interaction between research, media and policy communities has been seen before in response to difficult new knowledge around global environmental change. ...

But above all television needs good stories. Definitions of a ‘good story’ vary but television executives have three proxies: strong ratings, positive critical reaction and a less tangible sense of whether or not a programme has been ‘talked about’ (whether within the industry or more widely in society). For anyone in the policy or research communities concerned with material demand reduction a good story will also need to support macro or micro changes to systems and/or everyday lives.

To help this search for powerful phrases and tones here, by way of an example, is one simple proposal: to focus on the word quality. ... Quality is one potential unifying theme.

Extract from: Joe Smith. 2017 Demanding stories: television coverage of sustainability, climate change and material demand. Phil. Trans. R. Soc. A 375: 20160375

Ways of Knowing

A few examples will also show the importance of questioning the underlying *ways of knowing* for this work. In other words, we need some re-evaluation of knowledge in order to understand necessary aspects to creating conditions for transformation and how creative practice works to promote these conditions. For instance, the Transition Movement, in

encouraging *inner transformation* alongside and supportive of adaptation to low carbon futures and other tangible goals, talks of 'emotional, ethical, sensory, intuition, as well as rational' ways of understanding change and the knowledge needed to make it (<https://transitionnetwork.org/news-and-blog/ways-of-knowing/>).

The need for – and value of – plural ways of thinking is brought to attention by indigenous scholars, e.g. Sheehan (2011). Knowing is embodied and scripted in culture. The *Ways of Knowing* project (AHRC-CC, 2013-14) starts its first zine with the words: "Knowing isn't separate from life. It's a process." This opening points to the project's own process of using "the relationship between sociality and being and understanding and insight in ways which nourish and enable collaborative and participatory research"

(<https://waysofknowingresearch.wordpress.com>). The project's highly reflexive activities - of bringing together different kinds of knowledge and knowledge makers and presenting these intersections in creative ways - shows both the creativity in making knowledge and the importance of considering what is being included and excluded by habits of mind. Their research eschewed any "rightness" (ibid) of research practice on epistemological grounds, appealing to consistencies of ethics and rigour as underpinning good research.

This openness to different understandings of knowledge can have significance far beyond research. As Arabena puts it: "Modern Australia's knowledge is founded in fossil fuel. Indigenous peoples' knowledge is founded in sunlight. The stability of sunlight as an energy source has seen the capacity of Indigenous people to hand down knowledge of how to live in country generation after generation. Petroleum as an energy source makes us oblivious to our natural environment. We are at a point where we can transition from this petroleum based energy context and it is a moment of significance far beyond what any of us can imagine." (2010).

Elsewhere, digital artist Annie Abrahams reframes the issue in yet another way when she talks of 'building an empathy muscle' as part of *Entanglement Training*, through her work connecting up remote sites and people and (<https://aabrahams.wordpress.com/2018/04/02/building-an-empathy-muscle/>).

Relevance to Policy

In this commentary, we have begun to assemble the crosscutting evidence from creative practice that we think is useful to inform policy discussion. Transformation poses particular challenges for policy. We can ask, with the *Transformations* '17 conference: "What are the implications of transformative practices for policies at different scales? In what ways can policies impede or catalyse transformative practices? How can practices that are effective in one place or context be translated or transferred to other contexts?" (<http://www.transformations2017.org/about>).

But we can also draw attention to some particular features of this kind of intervention that makes a policy perspective intrinsically challenging. The first is particularly foreign to this way of thinking. It is that this work, slowly and pluralistically, builds a social and economic environment where change is creatively-driven by interest, not imposed by outside uncertainties or goals, and this is intrinsically hard to put into targets, even though it is culturally very much to be desired. Use of creative practice blurs boundaries. It is not merely an arts-based process, but appears across the curriculum and the workforce. It could be the birth of a million different experiments across the face of the globe. The closest

approximation in current rhetoric is the innovation and entrepreneurship agenda, with its embrace of STEAM as well as STEM, i.e. it sees a place for the arts alongside science and technology (e.g. see Feldman 2017 (http://www.slate.com/articles/technology/future_tense/2015/06/steam_vs_stem_why_we_need_to_put_the_arts_into_stem_education.html)). Millions of people innovating with new ways of conducting life is bound to deliver on a number of fronts.

Conclusions

The humanities concern themselves with exploring ‘the process of creative intervention that humans make in imaginatively interpreting and expressing the meanings of their lived-in experiences’ (Abhijit et al 2012). So, our endeavour to use creative practice to support transformations to sustainability is a humanistic one, even if we are drawing from practices of science and other forms of knowledge. It is also more. The work may be for humans to do, but the benefits are a greater sustainability for all forms of life and improved co-existence. These benefits are required for survival and mitigating climate change, but they are also the building blocks that enable people to find meaning in making and responding to change.

In this commentary, we have looked at both what is being done in this area – within and outside research contexts – and how it is making an impact. We have identified six themes that play to the strengths of the arts and humanities but which can be interpreted through creative practice spanning public science, dance, mapping and acknowledging loss. We have shown that it is possible to use evaluation measures that do not conflict with transformative goals, and also that it takes work to make these appropriate against a backdrop of short-term behavioural assessment. We have considered what kind of knowledge is being produced and how it might fit into policy.

It is not easy to point to individual qualities of creative practice that, alone, suffice to inspire people to live with and contribute to transformation. We have provided a range of approaches to creating meaningful engagement and argued that meaningful engagement nonetheless has distinctive qualities. It is clear that affective involvement is necessary and on a scale where personal connections can be made alongside a sense of peer investment and collaboration with others. In other words, certain processes enable internal processes that are important for creating the conditions in which sustainability can manifest. We have begun to articulate where we might find these processes and how to foster them.

The authors came up with a number of adjectives that are associated with this type of work, not necessary or sufficient, but indicative of affective work with transformational potential:

Intimate, Engaged, Situated, Open, Critical, Inclusive, Respectful, Pluralist, Participatory, Protracted, Idiosyncratic, Reflective, Mindful, Values-based, Laborious, Repetitive, Attentive, Place-making, Collaborative, Inspirational, Ontological, Non-judgmental, Meaningful, Invested, ...

It seems we may need to make our relations in the world all these things and more if we are to harness people’s greatest potential for collaborative reinvention.

What this is not...

Not outcome-driven. Processes are valuable in themselves.

Creative practice works towards widespread transformation, but it is **not a formula** for scaling-up or being replicable.

Not, *per se*, about changing people or even awareness-raising - People having better selves, creative practice aims to appeal to parts of that self that being underused.

Not universal - each transformational process is rooted in specifics. The differences between processes in a series of locations may be more interesting than the commonalities.

Not transformation to 'sustainability' in a traditional / technical sense - This is transformation to bring about conditions for sustainability.

Not art alone - We use the term creative practice to include natural sciences, design and humanities.

Not to force closure on the meaning of transformation – which would be like trying to pin down jelly.

Not the final word – We seek to open up discussion, not be its end point.

Who we are

Ann Light is Professor of Design and Creative Technology at the University of Sussex, UK, and Visiting Professor of Interaction Design for Social Change and Sustainability, Malmö University, Sweden. She has been using arts methodologies as a transformational tool for many years in work to introduce a broader set of social values into technology and to explore the politics of design. She has been funded many times under the ARHC-CC programme, addressing different aspects of bottom-up sustainability, writes about Design for Sharing and is currently asking how research teams manage the intersections and competing demands of the SDGs as complex design challenges.

Deborah Mason is an artist and cultural activist. She has worked on a number of commissioned projects that enquire into the nature of creative practice and social and environmental sustainability. She is a member of the What Next? movement and chaired What Next? Southwark for 3 years. For the last five years, her own work as an artist has asked the question 'What can I, as an artist, do, to make a better, fairer, more sustainable world for everyone?'.

Tom Wakeford has been a participatory worker and action researcher collaborating with a range of universities and NGOs for two decades. He is the author and co-editor of articles and books on a range of issues including *Everyday Experts* (2017), *People's Knowledge: Escaping the White-Walled Labyrinth* (2016), *Empowered Participation* (2008), *Liaisons of Life* (2001) and *Science for the Earth* (1995). Tom is on the editorial advisory boards of the journals *Citizen Science: Theory and Practice* and *Action Research*. He is a member of the external advisory board of the Wellcome Centre for Cultures of Environments and Health at the University of Exeter.

Ruth Wolstenholme is Managing Director of Scottish sustainability charity Sniffer. She works with government, agencies, businesses and community-facing organisations to build capacity and facilitate collaborative working across sectors and organisations so that society is better prepared for environmental change. Under her leadership, Sniffer played a key role in launching and delivering the Adaptation Scotland programme, which helps organisations and communities prepare for and adapt to climate change. Whilst ensuring that evidence-based tools and scientific knowledge are embedded into engagement and change-making processes, Ruth is a strong advocate of creative approaches and recognises the important role for cultural practitioners in supporting transformative change.

Sabine Hielscher is interested in the politics, processes and materialisations of grassroots innovations and the dynamics of everyday (sustainable) consumption patterns, particularly the relationships between people, groups and technologies. She joined the Science Policy Research Unit (SPRU) at the University of Sussex, UK in 2010 and the

Zentrum Technik und Gesellschaft (ZTG) at the TU Berlin, Germany in 2015, where she has been working as a Research Fellow. Research activities have focused on understanding the practices of eco-village, repair initiatives, community energy groups, and community-based digital fabrication workshops. Sabine completed her PhD in Art and Design at Nottingham Trent University and worked for design studios and independent research units.

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