6

Global environments of ageing: towards co-designing climate resilient environments and communities for ageing well

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Introduction: ageing well in a changing climate

By 2030, an estimated 13 million people in the UK will be aged 65 or older, comprising 22 percent of the population (Office for National Statistics (ONS), 2023). This demographic shift coincides with the escalating impacts of the climate crisis, which presents heightened health risks for older populations (Haq, 2019). Vulnerability stems from both individual factors, such as chronic health conditions, and collective factors including social deprivation and lack of climate resilient infrastructure (Astill and Miller, 2018; McDermott-Levy et al, 2019). For instance, rising temperatures and more frequent heatwaves have been linked to increased mortality among older adults, particularly those with pre-existing medical conditions (Kaltsatou et al, 2018). Despite growing recognition of these risks, older people are rarely included in climate adaptation planning. Public engagement with this demographic remains limited, and there is a notable gap in understanding their perspectives, behaviours and climate imaginaries in relation to the places that shape their everyday lives (Latter, 2022; Pinna et al, 2024). Furthermore, little is known about how older people's everyday knowledge and practices can inform more inclusive and sustainable adaptation strategies.

This chapter reflects on the ways in which two independent one-year projects (2022–23) explored older people's perspectives of climate change to enable the co-design of more inclusive, resilient and sustainable places. *Understanding Older and younger people's PercepTions and Imaginaries of Climate Change* (OPTIC) co-created a comic book of climate change stories with older and younger people in five varied environments of ageing in South Wales. *Healthy Ageing in a Changing Climate: Creating Inclusive, Age-Friendly, and Climate Resilient Cities and Communities in the UK* (HACC) utilised

deliberative dialogue events with older people and co-designed workshops across four cities in the UK to identify ways to build resilient environments for ageing in response to extreme weather events. Drawing on our experiences of the two projects, we discuss how creative and participatory methods can be used to gather and share insights for co-designing climate resilient environments for ageing well. In reflecting on these methods, we highlight opportunities and challenges for future work in this area.

Exploring ageing and climate change through creative, place-based methods

Both projects explored climate change as a 'wicked' problem – a complex, uncertain issue involving multiple stakeholders and no risk-free solutions (Incropera, 2016). Healthy ageing has similarly been described as a wicked problem, shaped by sociocultural and political dynamics and marked by shifting, often contradictory, demands (Riva et al, 2014). It extends beyond biological or medical definitions to encompass autonomy, participation and wellbeing (Sixsmith et al, 2014). To engage with these multifaceted and affect-laden challenges, HACC and OPTIC employed participatory and creative methods to surface perspectives and stimulate reflection (Thomas et al, 2024).

OPTIC

The OPTIC project was carried out by an interdisciplinary team at Swansea and Aberystwyth Universities, Wales. The project used qualitative, creative workshops to understand intergenerational place-based climate change perspectives, transferred knowledge and perspectives between communities and stakeholders via a comic book and programme of events, and connected older people and stakeholders at a learning event.

To start, we set up an advisory group and carried out an online questionnaire to explore preferred comic designs. Next, 65 older (over 65s) and younger people (mainly under 25s) took part in creative workshops in the Swansea area. Recruitment was purposive, drawing on existing networks and contacts made through our advisory group, and targeting certain populations and geographies to reflect a diversity of demographics and lived experiences. Within the Swansea region, we were able explore multiple climate-related challenges in varied coastal, upland and urban environments, including areas where climate change stands to impact place-identities connected to farming, heavy industry and energy technologies. Carrying out the study here also meant we could explore deeply held climate change knowledges and behaviours through the Welsh language (Thomas et al, 2024).

Workshops included a variety of method options. A sit-down comic-creation activity utilised various modes (including words, pictures, maps,

symbols) to represent times, places and stories (Thomas et al, 2024). Mobile interviews allowed us to place ourselves and our participants within the case sites, facilitating an exploration of the relationship between them and the environment in which we collectively moved (Singleton, 2024a; Thomas et al, 2022). Online mobile group discussions used mapping systems (Google Earth and Street View) to virtually move through places to stimulate conversation (Singleton, 2024b). Cut-ups and collages provided tactile ways to reframe existing narratives, focus on what is important and shed light on different perspectives (Williams, 2023). Finally, storyboarding elicited discrete stories and required participants to think about important characters, narrative arcs and pivotal moments (Roberts et al, 2022). Workshops also included an icebreaking task based around a selection of small objects (for example, toy rocket, shell, egg timer) and a dice game (Thomas et al, 2023) to stimulate broader context thinking and specific place-based stories.

Stories from the workshops were then developed into a bilingual comic with illustrator Laura Sorvala (Thomas et al, 2023) (see Figure 6.1). We also held several outreach and engagement activities, culminating in a six-hour shared learning event, attended by older project participants and a range of policy, education and charity stakeholders. The event included design sprints to generate ideas for how to create environments for ageing that better address older and younger people's climate change perspectives and behaviours. The design sprints were structured around three broad goals from the comic: communities that live, work and learn together; healthy land, sea and air for all; and streets for people and growing. Each breakout group included a non-human participant seated at the table (a globe, teddy bear and oak sapling), as well as a spinner with six options (child, tree, fox, bee, older person, world) to encourage participants to think about climate change and ageing from alternative perspectives.

HACC

HACC was carried out by an interdisciplinary team based at Heriot-Watt University, Edinburgh and the Stockholm Environment Institute at the University of York, supported by a project advisory group. The project aimed to explore how to create cities and communities that are healthy, age-friendly and climate resilient to the impacts of extreme weather. We focused on four case study sites across the UK where the project team had established partnerships (Belfast, Northern Ireland; Cardiff, Wales; Greater Manchester, England; and Leith, Scotland).

We drew upon a range of methods and approaches. First, online policy and practice mapping workshops were undertaken with policy makers and practitioners to identify the challenges and opportunities of embedding healthy ageing within decision-making around climate change. Second, deliberative dialogue events with older people were undertaken to explore

Figure 6.1: A spread from the climate comic

Figure 6.1: A spread from the climate comic (continued)

Source: Thomas et al (2023) illustrated by Laura Sorvala. Available at www.climatecomic.co.uk.

how older people perceived climate change, including the ways in which extreme weather impacts healthy ageing and place. These were held concurrently with an online survey designed to capture older people's thoughts around climate change via images, video and poetry. Finally, a series of co-design workshops brought together older people, policy makers and practitioners – including one intergenerational session – to explore how to create climate resilient, age-friendly communities. These workshops used knowledge café approaches, with informal group discussions structured around key challenge areas presented as menus at each table.

HACC utilised principles of community-based participatory research to support inclusive data gathering and knowledge co-creation, ensuring equal contributions and space for shared priority setting (Parker et al, 2020). We captured workshop discussions using graphical illustrations and facilitator notes, while encouraging participant input via flip charts and Post-it notes. Participants valued the illustrations for capturing conversations in the moment, offering relatable visual outputs and a shared reference point. We also used a range of creative approaches to stimulate dialogue with case study and community partners. For example, in one deliberative dialogue workshop, we adopted a 'long table' format (Figure 6.2), adapted from performance art, where participants joined and left a staged conversation at will, creating an informal setting for inclusive discussion (Weaver, nd).

In the co-design workshops, we used a knowledge café approach (Schiele et al, 2022) structured around themed 'menus' drawn from earlier dialogues. Each table focused on a challenge area such as access to health services, community coordination during extreme weather, mobility and independence, and enabling older people's role in climate action. Mixed

Figure 6.2: 'Long table' conversation in the Rochdale deliberative dialogue workshop

groups of older people, practitioners and policy makers rotated between tables to build on previous discussions and co-develop interventions.

Workshops also included creative ice breakers, such as climate imagery model-building. We provided feedback at key stages, including illustrated lay summaries from the dialogue events. HACC concluded with an online event that brought together older people, policy makers and practitioners to present findings and recommendations (Woolrych et al, 2023). Breakout groups identified next steps, key partnerships (including with older people) and evidence gaps for delivering climate resilient, age-friendly communities.

Reflections on methods

OPTIC: providing time and space to share imaginaries

The OPTIC workshops and events provided time and space for older and younger people, and a range of stakeholders, to identify and voice their climate aspirations (Maddock and Thomas, 2024). These included ideas to boost awareness and engagement around climate change, shape policy and improve planning and infrastructure. A key theme was the promotion of community driven action and collaboration, and two key outcomes of the project were new and strengthened relationships between communities and stakeholders, and the development of methods with which to foster these (Thomas et al, 2024). In this section we draw on a range of participants' perspectives to show how our methods prompted us to slow down, consider what was important and share ideas.

Noticing changes in environments and practices was a common theme. For example, walking methods provided space and time to share ideas and feelings about places, things and affects encountered en route. During a session in a post-industrial town in the Welsh Valleys, children and older adults took an online walk together using *Google Maps*. They stopped to look at the river, remembering August duck races over previous years. They explained how water levels now vary so much: ducks are lost when the river level is too high or cannot race when levels are too low. In another workshop, comics provided primary school students with a template to tell the stories of care home residents, who remembered deep snow and ice-skating on their school pond. The children expressed disappointment that they had not experienced deep snow, and their comics included fantastical ideas of what they would do if they did.

During other sessions, we introduced spontaneity using a game and objects. Playing a dice game in class, an 11-year-old remembered when there were *fewer* trees on a street in Swansea. While the positive changes this young person had noticed were refreshing, nostalgia was a more common theme in our research. Participants lamented today's throwaway society, in which "people are disconnected from how the whole ecological system works".

Participants in all sessions drew on ideas and traditions from the past, including growing their own food, garden cities, mending, pop bottling (being paid for collected used bottles) and having "one bath a week". The first story in the *Climate Comic* was prompted by a (virtual) stone picked up by an older participant in the icebreaking task. She mused about stories the stone could tell, leading her to share memories of growing up, and how "we were doing all the right things" such as riding a bike, not travelling far from home and line-drying clothes.

Our learning event provided further space and time to consider what we could learn from past practices, to build communities and share resources. Here, participants suggested a wide range of solutions for reaching the goals identified from the workshops. These included individual actions such as less commuting, holding street events and building street ovens to enable shared food and shared conversations. While the design sprints were somewhat ambitious in the time available, the process generated plenty of discussion. Particularly valuable was reframing challenges to 'how might we …?' questions and considering the perspectives of non-human participants:

Glenn:	Can I just have a quick chat from the point of view of the tree.
Facilitator:	Yes.
Glenn:	I wish that people would get to know me, so you know, I've been standing here for 150 years, I'm a big tree and those f*****s are about to cut me down, so I expect this community to mobilise and get up me, climb into my branches and save me.

The desire for strong, responsible and engaged communities threaded throughout participants' future imaginings and aspirations. However, actions were often directed towards more strategic policy, system and infrastructural changes (Maddock and Thomas, 2024). It was felt that policy should be more inclusive and facilitate community-led initiatives, and that unused spaces should be repurposed to create places for community connection. There was a desire for community-driven power solutions and localised, sustainable living methods. This focus on community may have reflected feelings of solidarity and shared understanding during the research process, where disarming methods provided intergenerational learning opportunities, and where "it was a pleasant surprise to hear many of the same concerns" between generations.

HACC: working together to identify interventions

HACC identified six key areas that require action to collectively address climate change and healthy ageing in the UK: empowering older people

towards climate action; mobilising community and social infrastructure; enhancing mobility and transport for healthy ageing; climate resilient housing for ageing-in-place; healthcare and wellbeing for older adults in extreme weather; and intergenerational communities and climate resilience. These are explored in detail in Woolrych et al (2023). Here we reflect on how our methods facilitated dialogue and shared learning around complex conversations on climate change.

First, by creating an informal setting and creative approaches to engaging in conversation, we were able to capture some of the anxieties, concerns and uncertainty around what climate change means to older people. The long table format enabled people to share their everyday frustrations: "the challenges of climate change are really difficult to disentangle and understand how it will impact older people like me"; express their concerns including the impact of climate change on generational wellbeing: "we are worried what it will mean for our grandchildren and their children"; and the lack of agency many older people felt in being able to influence climate mitigation at a local level: "we feel powerless". As the workshops developed, discussions oriented to optimism and positive change, focused on action, how they can enable community resources and what they can do to support each other in response to climate change.

Second, forms of deliberative dialogue afforded the opportunity to challenge myths and perceptions about what climate change means to specific age groups. In our intergenerational workshop, younger and older participants were able to share stories about what climate change means to them. Older people discussed the active roles they play and have played within their communities, including how they have navigated previous crisis events, including the COVID-19 pandemic, while younger people discussed their perceptions of climate change and everyday behaviours within their communities. The intergenerational workshop created opportunities for developing shared actions, which formed a key aspect of our final recommendations report, and focused on creating intergenerational spaces within communities, bridging the intergenerational climate divide and sharing intergenerational resources based on helping others. In positioning their voice, expertise and 'place histories' within climate discussions, older people were able to challenge what they perceived to be negative associations in the media about their role in the climate agenda.

Third, through the co-design process we were able to open up alternatives to seeing climate change as "a distant thing that we can do nothing about", to realising a collective responsibility and turning abstract understandings of climate change into visions for how older people can be better supported before, during and after extreme weather events. A strong focus of the workshops was on understandings of place and how we can draw on assets that already exist within communities including physical spaces (community

hubs and outdoor environments), social supports (neighbourhood ties and connection) and knowledge resources (skills and expertise). We were able to move away from the more deficit or needs-based approach (what communities do not have) to one that looked at how to creatively connect the resources and amenities within communities to mitigate the impacts of climate-related events (such as mobilising what communities do have).

Lastly, the collaborative approach enabled significant opportunities to bring together older people, policy makers and practitioners to identify what inclusive, age-friendly and climate resilient cities and communities need to look like to support positive outcomes in old age. While there was tension within the workshops in some of the discussions between older people and decision-makers, it provided a space for diverse positions and perspectives to be understood. For example, there was recognition of the resource constraints facing many sectors in local government to deliver climate mitigation interventions. At the same time, policy makers and practitioners were able to reflect on the ways that specific climate resilient interventions could be better shaped around the lives of older people and the places where they live, therefore shaping the co-production process in ways to deliver better outcomes. In developing solutions, bringing together the expertise of older people and professional stakeholders allowed areas of connection to be established, revealing opportunities for climate change participation that older people had not known were open to them. For example, older people expressed challenges in having their voice heard in relation to climate action, while practitioners offered opportunities for involvement via climate assemblies and local and regional climate action networks.

Challenges

Both projects encountered several challenges. While we engaged with a range of partners and participants throughout, time and resource limitations meant we were constrained in what we could offer. In HACC, this was particularly challenging when working with voluntary and community sector (VCS) organisations that provided significant in-kind support at a time when the VCS is over-stretched and under-resourced. We often found ourselves making unrealistic requests of our community partners including support with recruitment, venue hire and co-facilitation of events within the tight funding timeframe. Project duration also made building long-term and sustainable partnerships difficult. While team members have been invited onto working groups with the aim of moving climate change and ageing forward (for example, Greener Later Life Greater Manchester, HACC), this has proved challenging to sustain both from an academic and non-academic perspective without additional resourcing.

OPTIC was also limited in its capacity to forge strong relationships. In aiming to work within five demographically diverse study locations, our approach at times felt extractive and led to some practical difficulties. We found, for example, that our timescale and resourcing was insufficient to build relationships with a traveller community we had hoped to work with. The project could not have happened without 'gatekeepers' (who we prefer to call 'bridge-makers' or 'boundary spanners' (Olabisi et al, 2022) because they were pivotal in connecting us with people). But being unable to directly liaise with some of our participants proved challenging. At our city street workshop, none of the young people recruited via a bridge-maker turned up, and we were unable to contact them. In another workshop it was difficult to organise consents and vouchers, because we relied on a busy member of the organisation to liaise with participants on our behalf. The project's short timescale also meant a small window for data collection. This rendered scheduling extremely difficult when faced with coinciding high rates of local COVID-19 infections and three rounds of strike action by members of school, university and train unions.

Short timescales and tight budgets also meant compromises had to be made. For example, as much of HACC's engagement and recruitment was undertaken via community groups, we recognise that the sample reflects more active and engaged older people, rather than those with pre-existing conditions or those experiencing mobility or cognitive decline, the very groups being significantly impacted by extreme weather. Additionally, there was lack of participation from ethnic minority groups who are seen as some of the most excluded from climate change discussions. More work is needed to engage with often unheard groups in responding to climate change, including reaching out to diverse communities in creative ways. While it was not a specific aim of this project, we also emphasise the importance of looking at more intersectional understandings of climate change that recognise the heterogeneity of the older population, and how age, gender, ethnicity, place and other characteristics intersect to impact health outcomes in later life.

In OPTIC, additional challenges related to the intergenerational focus of the project. While intergenerational research is gaining momentum in the UK (Coon et al, 2022), Green (cited in Peach et al, 2023) has advocated for more open and honest conversations about the complexities involved. Older and younger generations can have different needs with regards to the length and nature of sessions, activity types, timings and the accessibility of materials. There are particular ethical considerations to exploring climate change with children, including safeguarding, eco-anxiety and perceived inciting of activism (Bergmann and Ossewaarde, 2020; Roper, 2021). Such issues were addressed by working closely with our advisory group to co-design activities, and creating protocols to provide agency (for example, by making a collage/comic or teaching another participant how to play the

dice game), focus on positive framings and imaginaries, and by using playful, disarming methods to gently explore difficult issues.

These challenges necessitated flexibility, which often had unforeseen advantages. In the city street workshop, two OPTIC team members recruited their daughters to join in when the younger participants did not arrive. Serendipitously, one was very familiar with the place and brought with her a third generation, thus thickening the stories told here. In another case, we split a primary school/residential home session over two days and two locations rather than one workshop, which ultimately led to additional insights through involving the whole class. In the post-industrial workshop, more participants turned up than expected, creating rich data that were impossible to assign to individuals. Stories were developed into haiku, which better described the lively atmosphere of the workshop. The haiku helped spark interest from educators, who later worked with us to co-design an activity pack alongside schools and care homes (Thomas et al, 2025).

Conclusions

In this chapter we focused on the ways in which two projects explored older people's perspectives of climate change to enable the co-design of more inclusive, resilient and sustainable places. Our creative, participatory and intergenerational approaches provided time and space for communities and stakeholders to gather and share frustrations, knowledge and aspirations, and provided frameworks through which to identify interventions. The sessions offered direct benefits through social interaction, fostered solidarity between generations and facilitated valuable understanding of experiences of change, traditions of sustainable behaviours and visions for sustainable futures. Climate change is a global problem, and while our findings may be limited to the places in which the work was carried out, we suggest that our methods for co-creating visions and interventions with older people and stakeholders would be valuable in other contexts.

While there are vast and timely opportunities of working with older people and stakeholders to co-create meaningful change, there are of course challenges. Building tripartite relationships between academics, communities and policy makers requires significant time and resourcing. Furthermore, these conversations are the essential *first* stage of the process of change. While we were able to forge meaningful dialogue and identify critical priorities around ageing and climate change, there was an attitude among policy makers and practitioners that actual change would be difficult to achieve. Indeed, while climate change as a policy agenda is being afforded more attention, there is a lack of multi-sectoral working around how to achieve meaningful change. Barriers to impact include silo working, lack of resources and funding constraints.

Despite these challenges, and while participants commonly focused on policy-level changes, they also identified many individual and community actions to address climate change on a local level. Importantly, our research highlighted that co-designing for climate change is not limited to groundbreaking new inventions. Although Margaret's story (Figure 6.1) reminds us that we should not fall into a 'nostalgia trap', the knowledges, practices and imaginaries of older generations are vital in designing more sustainable and equitable environments. While it is human nature to respond to problems by innovating and *adding* something new (Klotz, 2021), much can be gained by learning from past practices. One of the most straightforward steps towards creating healthy and sustainable environments is to facilitate conversations so that these lessons can be shared. We hope our chapter provides inspiration for doing so.

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