Sustainable Flood Memory in Brazil: A Transnational Approach

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Abstract

The UK Sustainable Flood Memories project (2011-2014) and publications were shared with Brazilian researchers from the Waterproofing Data project (2019-2022) for developing a transnational methodology for eliciting flood memories from local communities located in flood-prone areas. What has been striking about the collaboration is the similarities in terms of emotions, knowledge, tradition around flood experiences and adaptation despite radically different socio-cultural and economic contexts alongside the significant differences in terms of relationships/ dependence upon the state, water governance systems and approaches to sustainability. This paper draws upon the creative work we did in generating Brazilian memories of flood events (drawing upon the methodology of the Museu da Pessoa) in the cities of São Paulo and Rio Branco, two very different locations, and compares these to the sustainable flood memory research in the UK. We explore what a transnational and multi-directional approach to the past and present narratives of remembering and forgetting of floods in variable contexts has to offer. Our findings bring lessons for how the arts and humanities can be brought to bear upon flood risk management in variable contexts of water governance by showing how trans-memorialisation, commemorative and storytelling methods can provide solidarity across national containers of water politics and management.

Keywords: floods, memory, sustainability, Brazil, water governance, narrative, media

Introduction

Environmental risks, natural disasters and extreme floods are highly emotionally

charged and circulate trans-medially as global stories of disaster or triumph (as

explored in Garde-Hansen and Gorton's *Emotion Online* 2012) in relation to climate

change. Obscured in and by these global texts and images of extreme weather, are

the lay knowledge bases, the local experts and the folk memories of environmental

adaptation that often prove pivotal to exploring community resilience on the ground.

In *Social Memory Technology: Theory, Practice, Action* (2016, 3-4) Worcman and

Garde-Hansen argue for a transnational approach to memory 'that figures the human

scalarity of memory as the starting point (and not country, content or cultural

container)'. Their book draws on projects that connect memory work across the UK

and Brazil and argues for a transnational and transcultural exchange of memory

theory, practice and action. Their case studies are of memory projects that engage

with hard-to-reach identities and communities in memory work that 'speak to an

emerging concept of trans-national and cross-cultural memory theory (see Erll 2011;

Rigney 2012)' which 'see memory as mobile, that is, "trans" and in transit.'[1]

(Worcman and Garde-Hansen 2016, 12). It is noteworthy that this mobility of

memory has had a particular resonance in Brazil where a 'right to memory' has been

enabled by the mobility of remembrance. Anna Reading has stated that (2011, 382,

385):

> Thus the discourse on a right to memory has emerged at the level of national
> and cultural policy, influenced by international debates as well as the news
> media, leading to different kinds of approaches to memory rights, as well as
> unofficial social initiatives. [. . .] A right to memory then [. . .] seeks to
> recognize the complex ways in which globalization and digitization may result
> in transmedial memories that can be used by different groups for different
> purposes at different times.

The memory work that this paper explores, was undertaken in Brazil drawing upon a

methodology developed in the UK and Germany, but it is important to note that the

earlier UK research ('Sustainable Flood Memorie's) was influenced by the 'social

memory technology' approach of Brazil's Museu da Pessoa (see Worcman and

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[1] There are other concepts of memory that imply mobility and plurality. Such as 'cosmopolitan memory' (Levy and Sznaider 2005), 'multidirectional memory' (Rothberg 2009), 'memory in the global age' (Assmann and Conrad 2010), 'transcultural memory' (Crownshaw 2014), 'travelling memory' (Erll 2011), 'dialogical memory' (Assmann 2011) and 'transnational memory' (De Cesari and Rigney 2014).

Garde-Hansen 2016). Thus demonstrating the transnational dialogue already established. It consolidates an approach to memory at the heart of our wider transnational project on flood remembrance and resilience, which posits that semiofficial and unofficial social initiatives that seek connection within and across territories will be vital for climate adaptation. As Ann Rigney has asked of memory work across borders:

> Increasingly, however, globalization, transnational migration, and European integration have been making the national frame less self-evident, both for practitioners in the field and for scholarship. […] Is it possible for memory to become collective and yet be non-national? What are the imagined communities that will succeed the nation-state? Are there specific forms of diasporic memory? (2012, 617)

In our wider project *Waterproofing Data* (see https://waterproofing-data.ubdc.ac.uk/), we explored not only how to map flood stories and interpret flood data (official and unofficial) but also sought out the transfers of memory outside of cultural representational modes: between family members (generational memory), between cultural policies (memory transfer from the local communities to the agencies and back, for example), between landscape and human and back (through art installations). We have covered the findings of the larger project in Calvillo et al 2022 and Albuquerque et al 2022, but in this paper we would like to focus on how the UK research protocol on 'sustainable flood memory' (see Garde-Hansen et al 2017) was adapted, transferred and developed in Brazil (particularly with local communities in Sao Paulo and Acre) with a much deeper engagement of the public with the multiple ways that flooding is remembered. In what follows we cover the transfer of the method, its engagement with the Brazilian communities, the findings of the flood memory work and the transfer of learnings back to the UK context.

What is 'Sustainable Flood Memory'?

In their study of citizen-engaged and community projects for flood resilience, McEwen *et al.*, (2018) argued that top-down and bottom-up forms of participation are not so effective for flood resilience and adaptation. They observed how there is a missing piece in these paradigms: the lack of flood memories that are embedded in a wider cascade of vullnerabilities around health and wellbeing of local communities, that affects their capacity to participate, engage and tell their story. In response, McEwen et al suggest a framework for building 'sustainable flood memories' with UK groups with lower social capital through community building and social learning. This cuts across the usual verticalised top-down, bottom-up communication pathway favoured by agencies and community resilience groups. How, though, can researchers support such horizontal communication?

McEwen et al's research funded by the UK's Economic and Social Research Council from 2010-2014 (with one of the authors of this paper as part of the research team) focused on the ways that new forms of communicating extreme weather were being shared as narratives, stories and anecdotes both vertically (through time) and horizontally (in time) as 'sustainable flood memory'. Inspired by the 'memory work' of the Brazilian Museu da Pessoa as well as other storytelling techniques from the USA, Australia and Scandinavia, the interdisciplinary team studied comparatively four different floodplain communities and their use of media, stories, cultural and social media to represent, report and store flood knowledge. The four settings were located in the lower River Severn Valley, UK[2] which had experienced an extreme flood in the summer of 2007. Such communities were inter-generational and in many

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[2] The River Severn is the longest river in the UK (it is approximately 220 miles), and it becomes tidal at the Severn Estuary flowing into the Bristol Channel, then the Celtic Sea and beyond into the Atlantic Ocean. It is an important and significant river in the UK landscape, and many centuries of settlements and industry are integrated into its meandering through key agricultural and urban settings.

cases had good local knowledge of flooding which they were able to share with other groups as well as with agencies and institutions through the course of the research. In what follows we explain the UK 'sustainable flood memory' methodology and how it was transferred and adapted to the Brazilian context.

Part 1: Sustaining Memories: Flood Memory Research in the UK (2010-2014)

The methodological approach of the UK 'Sustainable Flood Memories' project was to consider the relationship between communities at flood risk not as a pre-existing community or as a community that comes into being because of an extreme event but as a group of individuals connected by their memories of flooding. They were feeling individuals and remembering bodies, who were also technologically enabled producers and consumers of media (sharing stories, creating archives). We took as our starting point that those living with water and extreme weather were mnemonically connected to their environment through a watery sense of place. By this we mean, those members of the community in this research who remembered where floods had been and were likely to be, and they had a local or lay knowledge of flooding that they rarely made public or shared but were beginning to as social media was gaining popularity in the summer of 2007. In spite of their digitally literate community status, floods were still very easily forgotten, and in some areas at flood risk strategically forgotten in favour of an economic drive to clean up for 'business-as-usual'. Nevertheless, with these communities we sought out and captured those memories of flooding that would be important for their future preparedness and we engaged with local cultural centres and archives as locations for storing and connecting those memories with past flood histories. In doing so, the

community approached this sustainable flood memory work as critical to their own 'flood materialisation'[3] as a community at risk of forgetting.

In terms of remembering, this methodological practice involved 'memory work' as we laboured to uncover and share flood stories about and around homes, gardens, streets, businesses, churches, riverbanks, urban infrastructure as well as in personal relationships and families. Mediating flooding using photography, home video, broadcast media, social media and the Internet produced a social and technological cultural memory bank of stored flood knowledge. We found that this could be mobilised by interested parties (such as the UK Environment Agency), but it also necessitated different and sometimes competing narratives of flooding. In terms of forgetting, we also found some flood-prone spaces disavowing their watery sense of place (there were changes to street names, removal of flood marks, flood image fatigue and loss of archival images and footage). Thus, one outcome of our 'sustainable flood memory' research was to understand the role of amnesia and forgetting, as well as the vulnerability community members have to reliving flood experiences.

While it is important to share memories with communities that have either been flooded or are at risk of flooding, one key aspect of the UK project was to engage the four flooded communities we worked with in the making of digital stories. Here community members were enabled to combine photos with recorded stories and share these across the catchment or basin. Such a critical and reflective practice using digital media and engaging flood communities was a relatively new process for

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[3] In Garde-Hansen et al (2017) we analyse how far floodplain residents were aware of the 'long history of flood materialisation' in the region. Such flood material consists of contemporary archives, photograph galleries, images and videos on mobile phones and text/image/video files on laptops, but could also be more traditional sources, such as newspaper clippings in albums, in public houses and personal scrapbooks, as well as the 'flood marks' on buildings, riverbanks and in ditches.

ensuring that personal memories might empower flood-risk communities and contribute to preparedness for future flood events and their rate of return However, digital storytelling requires resources, training and equipment. As Worcman and Garde-Hansen (2016, 116) have argued:

> When a social memory technology is enacted in a community with high cultural capital and an integrated media system, it revealed to us certain universal principles underlying or seemingly beyond the social and economic difference. The desire was to tell one's stories of flooding and to save memories for future social actions.

The utilisation of Brazilian 'social memory technology' protocols to understand memories of flooding became increasingly fundamental to how the UK 'Sustainable Flood Memories' project played out on the ground. In the UK context 'lay knowledge, local experts and folk memories of environmental change proved pivotal to exploring community resilience' (Worcman and Garde-Hansen, 2016, 102). As Goodall et al (2006) noted in their edited collection *The Poisoned Well: Global Memories of Environmental Justice*:

> Understanding and appreciating the knowledge embedded in the memories of communities that have been environmentally disenfranchised is critical to knowing more fully the social ecology of the world at large and the environmental costs of technological developments (2006, xxii)

It is this recognition of the importance of local and lay knowledge that we returned as a Brazilian-inspired UK methodology for generating flood knowledge, back to Brazil and into the Waterproofing Data project. Brian Massumi has argued that extreme weather, like war, produces a narrative 'threat-form' of 'the suddenly irrupting, locally self-organizing, systemically self-amplifying threat of large-scale disruption' (2011,

20). In the context of the communities in Brazil we researched with, extreme weather was a threat for already economically and socio-environmentally vulnerable communities.

Part 2 - Waterproofing Memories: flood memory research in Brazil (2018-2022)

The research project 'Waterproofing Data'[4] (WPD) investigated the governance of water-related risks by disaster alert centres such as CEMADEN in Brazil, with a focus on the social and cultural aspects of data practices that may be missed by scientific data colletion and reporting. By simultaneoulsy engaging with national expertise centres, local experts and disenfranchised communities that are at severe risk of flooding in Brazil, we aimed to rethink how flood-related data is produced, used and circulated. The project was developed in the Brazilian cities of Rio Branco (state of Acre) and São Paulo (state of São Paulo). It sought to help build sustainable and flood resilient communities in these case study areas and sought to be more than 'coping' with 'uncertainty' (Coaffee et al, 2021, 541) and transform the ways in which the governance of flood resilience is conducted and made more equitable (see Petersson 2020). To do so, first we needed to understand how memory plays a part in 'hydro-citizenship' in a context where citizenship itself is often contested or denied to the population living in disinfranchised urban areas (Kowarick, 2002).[5] armiento et al. (2019) noted that hydro-citizenship is bringing democracy and participation together for 'the prefix "hydro" signals the idea that the material, cultural,

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[4] Waterproofing Data brought together an interdisciplinary group of researchers and institutions from the three collaborating countries (UK, Brazil and Germany) in coordination with Belmont Forum's Transformations to Sustainability programme (project grant ES/S006982/1) that ran from 2018 to 2022.
[5] The concept comes from the UK AHRC funded project Hydrocitizenship, which explores citizens' relation to water (http://www.hydrocitizenship.com).

and political-economic specificities of water make it a particularly important realm through which we can study emerging understandings and practices of citizenship, democratic life, and efforts to manage human/environment relations' (2019: 361)

One axis of this research project focuses on engaging citizens from disenfranchised communities to 'sense' (as distinct from the flood sensors that are technical and send data), produce and communicate flood data in order to stimulate flood 'curation' (Worcman and Garde-Hansen 2016; McEwen et al. 2016). Memory activities integrate this axis of the project. They were developed with dwellers from two disinfranchised settlements – one in each city – and students from local schools. We sought to support flood-prone communities to increase their resilience and future preparedness by storytelling and the creation of a collective memory of flood events.

As previously mentioned, the memory activities of WPD were inspired on the UK 'Sustainable Flood Memories', integrating a research methodology that adopts a transnational approach to memory (Worcman and Garde-Hansen 2016). Our community engagement method attempted to incorporate elements related to flood memories, and health and well-being of the local communities (Worcman, Garde-Hansen, 2016; McEwen et al 2018), as well as elements from the critical pedagogy of Paulo Freire, viewed by the research team as appropriate to work with vulnerable populations (Porto de Albuquerque and Almeida, 2020). Furthermore, the proposed methods were 'intensive excursions' and 'interventional as well as observational' as we delved into questions that revealed 'what matters to people' in the context of cascading environmental disasters (Pink and Morgan 2013, 352).[6]

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[6] See the recent article for the *Journal of Extreme Events* 'From extreme weather events to 'cascading vulnerabilities': participatory flood research methodologies in Brazil during Covid 19' by Calvillo et al (2022).

While it is relevant to acknowledge the differences Brazil and the UK, including socioenvironmental, political and economic factors, our focus was mainly upon what they share: citizens in varied contexts with personal experiences of flood with similarities, such as emotions, knowledge and traditions.

However, context-specific features, particularly the multiple risks that many citizens living in poor urban neighbourhoods face daily in Brazil (Spink, 2018; Valencio 2010), including the risk of violent and forced eviction from their flood-prone and informally-built houses, as well as the Covid-19 pandemic which revealed a cascade of vulnerabilities including environmental risk, which emerged during the execution of WPD, made evident the need to innovate beyond the original methodology of the Sustainable Flood Memory project. For example, while in the UK project participants were invited to bring to a workshop personal or familiar items that represented the flood memories in the area – news articles, photos, stories, anecdotes and others – and craft a story to be audio recorded. This option was challenged in Brazil, particularly in the settlement in São Paulo, due to the reported lack of citizens' audio-visual records and media narratives of the flooding events in the study-area. The adaptation in the original method was carried out in collaboration with the *Museu da Pessoa*[7], a Brazilian virtual and collaborative museum of life stories, which had worked collaboratively with Worcman and Garde-Hansen (2016) on a 'social memory technology' approach to sustainable flood memory.

In the flood-memory activities developed in Brazil from June 2019 to March 2020, we developed storycircles, structured in a context-specific staged design. We began by asking participants to think of two memories of floods – one that had a

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[7] https://museudapessoa.org/

personal relevance and another that was memorable to their community – and to write a word representing each of these memories on cards. In the sequence, contributors shared their memories, which were audio recorded, and put the cards in a timeline. In the UK experience, in-person storycircles are replete with resources and materials passed around members of the group. But our participants in Brazil mainly talked about their memories, instead of representing them in pictures or news articles, and they did not write the story to be audio recorded (due to time constraints, low levels of literacy, barriers to sharing resources locally). As regards local students, who are more familiar with digital technologies, we asked them to identify and interview people from their neighbourhood that had a flood experience, and they then produced short flood memories videos that were circulated in schools.

The revised methods were responsive to people's individual context and allowed the sharing of a sensitive issue – flooding – in a way that was safe and promoted collective recognition and identification. In view of the positive feedback and people's rising interest in the flood memories, we organized a collective gathering in São Paulo in which participants came to present and debate their memories to a wider audience in September 2019. These rapprochement strategies seemed a good basis upon which to promote the initial round of production and communication of the flood memories locally, and people gradually started to feel at ease to share (and record) their memories and materials on past flooding experiences: videos and photos, mainly, but also showing some physical marks of past floods and preventive strategies/instruments in the houses[8]. Some of these memory-related experiences and marks were photographed and are displayed below

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[8] Some of the memories heard at this point of the project, due to their value, deepness and richness, were later transformed into short documentaries.

(Figs 1 and 2). However, deeper engagement with the materiality of these marks was challenged by the emergence of the Covid-19 pandemic in 2020, demanding new and alternative paths for producing and circulating flood memories.

Figure 1. Picture of a hole in the wall opened by a dweller during a flood (and kept open for pracaution). Source: Lucas Lourenço (2021).

Figure 2 - Indication of flood-mark of previous events. Source: Waterproofing Data Project (2019)

From March 2020 onwards, due to the temporary impossibility of conducting new rounds of in-person storycircles, the researchers adapted the approach to recording flood memories to a low resource and engaging method They decided to use digital devices to capture new memories and to broaden the circulation of the already collected flood-memories. The strategy was to turn the audio-recorded flood memories into short videos, to be disseminated online. This required new and higher-quality recordings of people's memories, which were made in 2020 and 2021. This initiative was named 'Waterproofing Memories', and resulted in the creation of 30 short videos that are available on Youtube[9]. Even though the production of these short-documentaries was done by professionals, not by citizens, they were shared (online and in-person) with local dwellers and other local stakeholders, contributing to the valuing of citizens' memories, knowledge and emotions and to the expanding circulation of these memories. Such videos have also been extensively used in

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[9] Access this collection of short-documentaries, which are called Waterproofing Memories, at https://www.youtube.com/watch?v=0J68ipWcZZg&list=PLZZNN7FVFEjj8yqC89XgmigCNlpmxAmX0

several activities of the project, including meetings with authorities, experts and activities with our partner schools.

In addition, we carried out an online Flood Memory Contest (something fun or even 'silly' – to borrow from Kraftl 2020 – in the context of pandemic trauma) with four public schools in the two cities. This Contest took place from August to November 2021 with a twofold goal: to incentivize student engagement with flood memory creation and dissemination in their communities, and to produce additional material for the development of an artistic installation to be shared with a wider audience. Students were closely accompanied in the Contest by the researchers, teachers at schools and audiovisual professionals, which encouraged them to creatively collect flood memories and other related materials, such as videos and pictures, and transform these materials into homemade videos with the use of digital technology.[10]

The Contest was interdisciplinary, involving teachers from various disciplines, who became excited about the activity and adapted it to their own curricula, requiring different submission formats. It involved 126 students and resulted in the production of 36 short videos. The ownership of the call by the teachers, although successful in terms of engagement and impact, has become a challenge for the research team. As the entries are in different formats it complicates the design of the art installation, showing the tension involved in different degrees of openness of a co-design process.

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[10] Examples of this close monitoring were the organization of online meetings with the students of each school and two live sessions with the students, one to launch the contest (https://www.youtube.com/watch?v=8R4Ud2EobBs&t=29s) and another on tips to best produce the flood memory videos (https://www.youtube.com/watch?v=8R4Ud2EobBs&t=29s).

The outputs of the flood memory activities in WPD include the mobilisation of more than 280 people, as depicted in Table 1.

Table 1 – Metrics of the flood-memory activities in WPD (2019-2021)

		Number of participants	Outputs
2019	Students (São Paulo)	76	16 flood memory vídeos
	Community dwellers (São Paulo and Rio Branco)	51	19 flood memories recorded, 1 intergenerational collective gathering on flood memory
2020/21	Students (São Paulo and Rio Branco)	126	Flood-memory contest with 4 public schools 36 flood memory videos, 10 flood memory short-documentaries (Waterproofing Memories)
	Community (São Paulo and Rio Branco)	29	29 flood memories recorded, 20 flood memory short-documentaries (Waterproofing Memories)

The short flood-memory documentaries that comprise Waterproofing Memories, as mentioned previously, were made with professional support. The flood memories were audio recorded and later, with the addition of pictures, scenes and sound-editing, transformed into short documentaries. Narratives on these videos were transcribed and categorized from the recordings and interviews from the gatherings noted above. The 20 videos produced with community dwellers form the empirical material analyzed in the next section.

Part 3 - Findings of flood memory work in Brazil

The development of our flood memory work in Brazil produced several learnings on how dwellers of disenfranchised flood-prone communities perceive, experience, remember and communicate these events. This allowed an incorporation of and comprehension of their emotions, lay knowledge and traditions with regards to floods, as well as of their approaches to building urban resilience.

The analysis of these aspects presents similarities and dissonances in relation to our flood memory research in the UK. With regards to resemblance, in Brazil, the sharing of memories revealed valuable, but sensitive and often hidden, experiences with floods. Similarly to the findings of Garde-Hansen et al (2016), we observed the role of emotion and trauma in local narratives of floods, with these appearing as constitutive features of a sustainable flood memory. Table 2 presents some excerpts of those flood-memories that depict emotion and trauma[11].

Table 2 - Excerpts of the memories showing elements of emotion and trauma.

Identification	Excerpt
Interviewee 10 (2020)	'Even today I feel the losses! I felt sad, because I lost everything I had, a lot of things and I didn't know where to go, I wanted to get out of here but I had nowhere to go and die peacefully, so I stayed here, it is left in God's hands, that's what I thought.'
Interviewee 16 (2021)	'And now any rain that comes when it fills the sewers, we are already afraid of another flood, you know?'
Interviewee 15 (2021)	'I don't have a very clear memory of the situation, because I was very nervous so I started not thinking very clearly, you know?'

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[11] These excerpts, as well as the following, were collected in Portuguese and freely translated into English by the authors.

Simultaneous tendencies of remembering and forgetting were also notable in Brazil, although some minor differences were observed. In terms of remembering, the adapted flood-memory work in WPD contributed to uncovering and disseminating flood stories about homes, churches, businesses, streets, public transportation and relations with neighbours, families and friends. We found that these stories, particularly the videos in Waterproofing Memories, could be mobilized by interested parties, such as local civil defense agencies and school teachers, and experts in university and research centers working on questions of climate justice, flood-risk governance and memory studies.

Furthermore, such initiatives were important to register and disseminate lay people's narratives, knowledge and experiences of flooding, amplifying citizens´ identification and connection through their memories of flooding. They were also deemed appropriate as a broader 'mobilization strategy' wherein the organisations involved in the flood research (such as the schools and CEMADEN) discovered life stories of flooding as a way 'to register their memories', 'valuing their stories' and communicate an 'environmental awareness' (Worcman and Garde–Hansen, 2016: 61). In the words of a local community leader in São Paulo:

> [these flood memory activities] brought us closer to some people who maybe we weren't so close to, and it showed that I can count on you, I can talk about my difficulties, so it's pretty cool, maybe there was no intimacy before. (...) You see the trust link that they already have now (Interviewee 6, 2020).

Illuminating and disseminating people's memories on such a sensitive issue, as in the UK, promoted a critical reflection on existing flood materialization efforts, minimising the risk of forgetting and encouraging future preparedness, as revealed in the excerpts below.

Those stains there are still from the flooding, from when the canoes came and the water splashed and it got wet there and the stains fixed, you know. Even today, I think it will never end. And I have never painted it either, which is to keep a memory of the flooding (Interviewee 18, 2021).

I thought I was going to lose everything, because there was a lot of ice and a lot of water, we didn´t have time to put the floodgate down. I called the neighbors, then the neighbors helped me open a hole in the wall at the back of the house. (...) The rain stopped, there was some time needed for the water to flow to the back of the house, to the hole back there in the wall, that's where the water was drained out from. (...) The hole in the wall is still there, I feel safer with the hole, it's open, I feel safer because if I cover everything, then suddenly the rain comes at once, the water comes, what then? (Interviewee 10, 2020).

The analysis of the narratives in the Waterproofing Memories phase of the Waterproofing Data project made visible the participants' 'watery sense of place' (as had been the case in the UK research), allowing the identification of various coping strategies mobilized by citizens and their lay knowledge related to flooding. One woman from São Paulo, for example, explained that she could tell if it would rain (and possibly flood) in her neighbourhood just by looking at where the clouds were coming from.

The material produced allowed reflections on two other aspects, advancing understanding of the potentialities of flood memory work as a transnational approach. First, it depicted the existence of multiple types of flood risk communication flows and disruptions involving citizens and government stakeholders during flood-related disasters: (a) lack of communication, (b) internal or endogenous communication, (c) unilateral (or top-down) communication, and (d) dialogical communication, as has been explored by Cruz, Mata, Lima-Silva (2021). A better

knowledge of these communication flows, channels and blockages can improve local water governance schemes and existing approaches to urban resilience.

Secondly, the memories related to the Brazilian context simultaneously showed the scarce suport offered by governmental agencies and the multiple and varied demonstrations of solidarity and community mobilisation during and after these emergencies. On the one hand, our findings confirm that those affected by floods in disenfranchised neighborhoods are often helpless during those events, receiving scarce official information or support from local government in preventive actions, mitigating and preparatory measures, besides facing the fear of forced eviction (Valencio, 2010). It is unfair to say that governmental support is non-existent, but it often comes late, after the disaster has taken place and when houses are already flooded, and it arrives as relief measures, such as donations of food and cleaning material when the water goes down. The stories made it clear that even public servants can be helpless in floods, as shown by this excerpt: "The boat sank, we drifted, we swam into the river trying to save ourselves. And, at that moment, we remembered that despite being representatives of the Civil Defense, at that moment we were the ones that needed to be saved" (Interviewee 01, 2020).

On the other hand, while the research in the UK explored how the four floodplain groups had different degrees of community development, which affected their resilience to floods (Garde Hansen et al 2017), the memories in Brazil demonstrate the potential of flooding events for leveraging mobilisation and collective action initiatives. They indicate that citizens facing floods can receive support from varied stakeholders – such as neighbours, passersby, family members and local leaderships during and after the flooding events – and start mobilizing their

neighborhood and other political stakeholders to reduce future risks of flooding. The following excerpts exemplify the social support and community mobilisation mentioned in the analysed materials.

> And we were in the dark, we spent the night in the dark because they turned the lights off, but then, the next day, I had to get out in a water tank with my special son because there was no way I could swim, I didn't know how to do it, neither did he. At the time I worked at a firm and the company manager was very nice to me and asked people to get me out of the house, my supervisor took me out. I went to my supervisor's house with my children (Interviewee 4, 2021).

> Then there was a day that it was raining all day, then the slope reached the house beam, if you looked at it from the window, you were even afraid to stay at the window for fear of a landslide taking everything. Then it got to a point where my son-in-law arrived and said: "Teresa, get out of here urgently with Yasmin, it is risky at night if you are sleeping and a storm happens, this house will fall and take you". Then I had to leave in a hurry (Interviewee 17, 2021).

> But there was a time when the volume of rain water increased so much that it began to enter the houses. And then, I started to reflect with the people from my street and in the community, "Something is wrong, right?" (...) So, we thought of mobilizing the community with a petition and a visit to the Public Defender's Office, and the public defender started to serve the community. I went to a meeting one day, twice, with six residents and residents here in the neighborhood, we took a petition with many signatures, we took photos and listened to him and there began a process (Interviewee 12, 2021).

In terms of forgetting, we also found some rejection of participants' watery sense of place (there was removal of flood marks, scarce registering of these events and loss of archival images and footage). Thus, similar to the UK research findings, one outcome of our research was to deepen understanding of the relevance of forgetting and the vulnerability community members face when reliving and sharing flood experiences. In the Brazilian context, where citizens live in flood-prone areas, they often face a process of 'un-citizenshipping' (Kowarick, 2002) and the risk of

forced eviction, people might opt to silence their public discourse on the risks and their experience of flooding. As argued by Ulrich Beck (2000), in the society in which we live, risk and public discourse about risk merge and, therefore, we refrain from speaking of flood risks in an attempt to avoid the realization of fears (Lima-Silva et al., 2022). To overcome this challenge, a longer dialogue was established with local dwellers to clarify the research. Local partnerships were essential. As already indicated by Fischhoff (1995), having people recognized by the community and trusted by their eyes among the project promoters was fundamental for us to move forward with a communicative process that deals with risk.

Conclusion

The analysis of flood memory work in the UK and in Brazil, although developed in different contexts and times, allows for the exploration of what a transnational and multi-directional approach remembering and forgetting of floods has to offer. There are many similarities in the two contexts. First, in both places the experience of flooding is never fully erased. Even though many of the participants opt to forget those events, the enduring trauma of flooding shows that the emotional aspects of that lived experience linger. In Brazil, floods were often a silenced issue, which were not integrated into daily conversation due to trauma and the permanent risk of forced eviction to those living in areas of informal and socio-environmental risk. The initiative of illuminating those stories contributed to reducing the taboo of sharing flood experiences, reinforcing community links and sense of identity and to strengthening the role of the few flood marks in the areas. It sought to avoid the risk of forgetting and increase the future preparedness and resilience.

Second, the work in Brazil also revealed that the findings of the UK research that sustainable flood memory can be practiced vertically (between generations and over time) as much as horizontally (across communities through media and storytelling). However, in Brazil intergenerational exchange was much more powerful, both in the flood-memory circles and in the flood-memory research activity with school students. These activities made evident how little the younger generation knows about the history of their neighbourhoods, which were informally built in the second half of the last century, and that people's flood events/experiences and memories where not part of everyday family conversations, as they were in the UK context.

Creating strategies for vertical community flood memories has potential to produce social learning in Brazil (memory work pioneered by the Museu da Pessoa, recently celebrating its 30th anniversary as a promoter of social memory technology). Sustainable flood memory activities in Brazil contributed to making audible and visible the voices and images (and memories) of a hitherto invisible population; to creating relationships of trust, which allowed people to talk comfortably about their flood memories without fear; and, to critically reflect upon the inequalities of the neighbourhoods in terms of their scarce infrastructure, socioenvironmental and political vulnerabilities and lack of authoritative and citizen-generated data for improving local resilience to disasters.

Creating strategies for horizontal community memories showed the diverse ways in which different individuals materialise flood memories. Our experience of researching flood memories for this project shows that it contributes to generating empathy: not everyone has a flood memory, but may think about this socio-environmental event differently after hearing the flood memories of others. This

requires grassroots media and communications, and the social mediation of those flood memories if they are to circulate and reach beyond the communities at risk. The connections of horizontal and vertical axes provide opportunities for inter-generational learning within and across communities. However, institutions, agencies and media outlets need to understand how community memory and lay knowledge function regarding flood trauma sited within a disenfranchised community. Here one must move 'away from the singularity of the flood event and its impacts toward acknowledging the cascading conditions of social vulnerability (caused by weather, health, social and political conditions)' (Calvillo et al 2022: online). In Brazil stimulating flood memory, since this theme is often silenced due to the risks it may bring to people living in a situation of disenfranchisement and socio-economical vulnerability, increases preparedness for future flood events while revealing the intersection of flood risk with other vulnerabilities.

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