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Final Accepted Version

Who is a Hydrocitizen? The use of dialogic arts methods as a research tool with water professionals in West Yorkshire, UK

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Abstract

There is currently a recognition of the need for more collaborative approaches to water management, which involve communities of place as proactive stewards of their local water environments. However, the desire for such participatory approaches sits awkwardly with the primarily technocratic orientation and practices of the responsible professional organisations in the water sector. Professionals sometimes struggle to communicate with, or respond, communities stressed by flood and other impacts. This paper examines the concept of ‘hydrocitizenship’ in relation to the engagement between professional stakeholders interested and involved in water landscape management, regulation and associated issues, and communities in the River Aire corridor, Yorkshire, UK. The case study-based research used innovative, arts-based exploratory approaches that aimed to examine participants’ relationships with water and how local environmental concerns about policy and water could be revealed. Group conversations and interviews were used as a strategy both to develop mutual understandings between participants and to inform the creation of public performances which stimulated further discussion and reflection. The paper focuses on reporting the role and experience of stakeholders, and identifies the emergence of unexpected synergies, where performance became the means of two-way communication between the different groups involved in the research. In particular, a flexible, creative and playful approach captured the imagination and gained interactions and creative collaborations within local communities and stakeholder groups. The paper concludes by reflecting on possible extensions of this work in other contexts.

Keywords: river landscapes; water management; community participation; dialogic arts practice; performance as research; stakeholder engagement.

1. Introduction

In landscape research, water is conceptualised as a defining factor in the functioning and character of local environments and cultures. The relationships of communities and individuals with water in the landscape are complex, and often hidden or under-acknowledged, but can be described as mutually moulding: water shapes both landscapes and people's identities within those landscapes (Jennaway 2008). This interactivity is recognised in the European Landscape Convention (ELC), which came into UK law in 2007 (CoE 2000), and emphasises the importance of ensuring that people's concerns about their local environments are revealed and heard (Roe 2018). There is, however, a striking disjuncture between the desire for such participatory approaches and the conventional practices of the water management industry in the UK (Cohen and Davidson 2011, Smith 2008).

During the nineteenth and twentieth centuries, developments in science and industry led to water being treated primarily as a quantitative resource rather than as an integral feature of local environments (Illich 1986). In the current century, there is widespread recognition of the need for a more ecologically integrated approach to water management, which involves communities of place as proactive stewards of their local water environments (e.g. Durán Vian et al 2018, Batt 2017, Benson et al 2014, Junker et al 2007). The potential for such "hydro-citizenship" among the general populace, however, may be obstructed by the lingering dominance of hierarchical, technocratic paradigms. This paper describes and analyses an action research case study conducted among water professionals in West Yorkshire, UK, which attempted to explore and address this issue. Creative arts methods, including facilitated dialogues and site-specific performances, were used as tools in an ongoing engagement process, which sought to develop fresh perspectives on the citizenly roles and responsibilities of water professionals, as well as ordinary members of the public.

2. Project Rationale: Towards Hydro-Citizenship?

Technical approaches to water management have long tended to treat water as a volumetric abstraction (Linton 2010). The environments through which water moves are thus treated in terms of what Harvey (2006:272) calls "absolute space"—the space of standardized measurements, ordnance survey grids, and "all manner of . . . engineering practices." Depending on the mode of specialization, watercourses may be conceived as drainage channels that must be kept flowing to prevent flood risk, as outflows for treated wastewater (sewage), or as transportation routes where the infrastructure must be maintained. In each instance, the channels in question are treated as components in "technological networks"; "nets thrown over spaces [which] retain only a few scattered elements of those spaces" (Latour 1993:118). Those who live in the physical proximity of rivers, canals and pipelines are often treated as incidental presences: "They lie there, on space, in place, without trajectories of their own" (Massey 2005:4). Local populations might be considered as risk factors to be managed, or as passive receivers needing to be informed about their own risk levels, but rarely are they perceived as potential partners or proactive citizens.

Under the technocratic paradigm of “modern water”, argues Linton (2010:18), “we have left all responsibility for maintaining relations with water to experts.” In recent years, however, growing awareness of climate change and its implications (including increased risk of both flooding and drought) have made it increasingly difficult to consider water solely as a technical abstraction: “we can no longer ignore water’s *ecological* dimensions” (Linton 2010: 7). A rich body of literature has emerged that seeks to rethink water governance from a variety of angles. For example, Dicks (2014) has articulated the case for overcoming abstract thinking by “letting water appear” in the landscape—by daylighting hidden watercourses and redesigning drainage features. Conversely, public participation initiatives have been developed which seek—in effect—to “let people appear” in the technical conversations around water: these range from exercises in “urban ethnohydrology”, as a tool to inform water distribution planning (Gartin et al, 2010), to the pioneering of “competency groups” that bring local residents in flood-affected areas into dialogue with professionals, as a means to diversify the knowledge base informing flood-risk modelling (Landström et al, 2011). In seeking to explore “discrepancies between the firsthand experience of flood events . . . and the flood science that informs ‘evidence-based’ flood-risk management,” the latter project prompted professionals to “slow down” their thinking and reconsider their interaction with the lay public (Whatmore and Landström 2011, 585).

Even so, the risk with citizen-science models of diversified data-generation is that the knowledge gathered continues to be funnelled “up” toward those with the authority to act (the “experts”). As Whatmore and Landström emphasise, those with power need “to be more attentive to the multiple and emergent constitution of publics and their political capabilities” (2011, 584). This is especially the case given that the impetus to extend public participation in the water sector has arisen in part from a concomitant, neoliberal slimming of state provision. In the UK, for example, the Environment Agency (EA) has sought to develop more active collaboration with local communities around flood response, under a policy of “distributed responsibility” (Pitt 2008). This shift of emphasis is inseparable from the significant budget cuts absorbed by the agency during a period of public “austerity”. Similarly, in 2012, the state-operated British Waterways authority was reconstituted as an independent charity, the Canal and River Trust, which must now generate revenue through memberships and donations. Meanwhile the UK’s water utility companies, privatized in 1989 (Bakker 2003), have increasingly sought to raise public awareness of water sensitive behaviour, partly in order to drive down repair and maintenance costs. Understandably, some have accused both the state and private sectors of seeking to divest themselves of unwanted responsibilities and transfer them onto the shoulders of an already vulnerable populace (Evans and Reid 2014).

If, however, citizens and communities can develop a greater sense of ownership and agency in relation to the water in their local environments, this could constitute a necessary corrective to the modern water paradigm. It might also lead to social and ecological benefits which a purely technical approach could never have delivered. As Chen et al (2013:9) usefully note: “Thinking with water demands that we move beyond simply asking, ‘Where are these waters located?’ and ‘How can they be useful?’ to also ask, ‘By whom and how are these waters situated?’ and ‘How do they bring us together into community?’” Even so, rethinking the environmental responsibilities of the general public will also require a

rethinking of habituated professional practices. The absolute space of engineering needs to be complemented by Harvey's "relational view of space," which recognises that "an event or a thing at a point in space cannot be understood by appeal to what exists only at that point. It depends upon everything else going on around it" (2006:274).

Relational space is "a multiplicity of stories-so-far" (Massey 2005:24), in which not only the relations between communities and landscapes, but also those between communities and authorities, can be as seen as mutually moulding (Roe and Taylor 2014). If, for example, operational habits prompt professionals to treat local populations as components in an engineered system, to be activated through one-way messaging, the results can be counter-productive. Communities who feel patronised or manipulated may react with distrust or even hostility—thereby prompting the relevant authorities to label them "hard to reach," without having adequately considered their own part in the communicational equation (Bottoms 2017). If publics are to be asked to take on greater responsibility in relation to their local environments, then as in any citizenship equation, those responsibilities needs to be balanced with a recognition of rights—not least the right of citizens to be treated as contributing partners in relationships based on two-way dialogue and mutual representation. The management of water, in particular, throws up "inevitable conflicts (or the displacements thereof)", Swyngedouw argues (2009, 57): "Particular attention, therefore, needs to be paid to social power relations (whether material, economic, political, or cultural) through which hydro-social transformations take place."

Even when professional stakeholders recognise the need for such reorientation, however, operational habits can be hard to shift. This paper thus builds on Isin and Nielsen's (2008:2) conception of "acts of citizenship – that is, collective or individual deeds that rupture social-historical patterns". These they distinguish from established, repeated "citizenship practices" such as voting. Acts of citizenship are novel gestures which challenge existing perceptions and create new possibilities, by positing that citizens are "those to whom the right to have rights is due" (ibid). The creative arts, Isin and Nielsen note, lend themselves to this task because of their potential to fuse aesthetic and ethical concerns in ways that invite spectatorial response. There is now an extensive literature on the use of participatory arts practices, within community contexts, not least "as a way of achieving social learning and understanding sustainability problems" (Selman et al, 2010: 18). However, professional stakeholders are often overlooked by such participatory processes, where concentration tends to be on communities of place. Professionals may be invited to act as advisors to community projects, but their own expertise is habitually treated as a fixed component, external to the community's learning. How might possibilities shift if professionals are treated as a community of interest in their own right, and as citizens who may also live within the geographic communities towards which they have designated responsibilities?

The case study research reported in this paper was part of a wider, interdisciplinary research project, titled "Towards Hydro-Citizenship" (2014-17). Researchers working across four different UK regions utilized a range of arts-based methods to explore the relationships between selected geographic communities and their water environments. Creative

interventions based on this research were staged within the chosen communities, and participants' responses were then fed back, cyclically, into collaborative dialogues around the potential for sustainable, future action. Within this wider project, however, a distinctive feature of the West Yorkshire case study was an ongoing attempt to engage directly with water-sector professionals as a "community" in their own right. Rather than being treated as experts, in an assumed hierarchy over mere locals, these participants were approached as fellow hydro-citizens who might also wish to engage in a collaborative process of reflection on their rights and responsibilities.

This approach arose as a consequence of an earlier, one-year research project (2012-13) around community awareness of flood risk in Shipley, West Yorkshire (Bottoms and McEwen 2014). Constructive dialogues were established with professionals from several stakeholder organisations during that period, but it became apparent, both from informal conversations and from observing cross-sector meetings involving multiple partners, that the lingering influence of technocratic paradigms was creating obstacles to communication between stakeholders as well as with the public. Interactions between organisations tended to be driven by the immediate, operational priorities of whichever partner had called the meeting. The resulting, transactional dynamics prompted other participants to ask how co-operation might benefit their own agendas. The identification of mutual objectives was usually a secondary consideration, despite the fact that many of the individuals concerned were personally invested in ideals of protecting and enhancing the environmental commons. These observations led to the framing of three, interconnected research questions:

1. What relational benefits might be achieved by engaging water professionals, as well as local community members, in creatively oriented, open-ended dialogue?
2. Could the sharing of personal perspectives and experiential narratives serve as a forum for developing new perspectives on the responsibilities that professional stakeholders have towards lay citizens and communities of place?
3. Might public performances, drawing on these dialogues as source material, function as "acts of citizenship", by re-envisioning local water environments in relational terms, as both managed spaces and lived-in places?

In the following sections we set out the methods used in the case study, and then analyse the results of this research. In concluding, we highlight findings around the potential value of conversation and storytelling as tools in developing greater relational awareness of the water environment, as a counterbalance to the technical, hierarchical management model.

3.0 Methods and Materials

3.1 *Participants and Context*

The research was focused primarily in Shipley, a former industrial mill town at the northern edge of the Bradford metropolitan district. The River Aire and the adjacent Leeds-Liverpool Canal pass through Shipley, *en route* towards the larger city of Leeds, twelve miles downstream. In Shipley, researchers collaborated with Kirkgate Centre, a voluntary-sector organisation with a community development remit, to develop ongoing relationships with residents of three water-proximate neighbourhoods (Roe and Scott-Bottoms 2020). However, most of the water-sector organisations with responsibilities in the Bradford area are based in Leeds, which is effectively the regional capital. It was therefore in Leeds that researchers sought most actively to build stakeholder relations during the initial months of the project, through both one-to-one interviews and invitational networking gatherings, at which we introduced research questions. The individuals represented a diverse range of organisations including, but not limited to, the Environment Agency, the Canal and River Trust, Yorkshire Water (utility company), Leeds City Council, Bradford Metropolitan District Council, the Aire Rivers Trust (voluntary sector), and Leeds Waterfront Association (business owners).

The first meeting of a new action research group was convened in January 2015, composed of professionals who had self-selected from among those initially engaged. The group agreed to meet on a monthly basis, for as long as seemed useful, in a “breakfast club” format (8am-10am) that would minimise interference with the working day. Six participants and two researchers were present at the first session, and this proved typical of subsequent meetings, although attendance was sometimes as high as ten or twelve. Gender balance was typically one woman to every two or three men present - proportions which, though undesirable, broadly reflect the water sector as a whole, particularly at management level. Representatives from all of the organizations listed above were involved, more or less consistently, in the ongoing meetings, and the group included experienced, senior figures. However, titles and hierarchies were voluntarily laid aside in this context, to allow breathing space for exploratory conversations. The group operated according to Chatham House rules, on the understanding that individuals’ comments were not to be repeated elsewhere with attribution. This was important in establishing trust and openness. The development of discussions was annotated by researchers, and it was understood by all participants that the group was a constituent element within a wider, arts-led research project.

At the group’s first, exploratory meeting, researchers provided a short introduction to Participatory Action Research (PAR) as a methodology for mutual learning (Chevalier and Buckles 2019). Immediate concerns were registered, however, at the implication that an objective of the meetings should be to move toward identifying some collective form of “action”. There were already plenty of meetings directed toward action points, participants suggested: “we all meet for similar but slightly different things on a reasonably regular basis” (R1)ⁱ. Yet any sense of collective, ethical responsibility for the water environment was habitually obscured by questions about who would pay for work to be undertaken, or which organisation’s responsibility it might be to address any given problem: “and there’s always a remainder that is nobody’s statutory responsibility” (R2). As one speaker summarised: “we’re all thinking ‘how do I get a quick win?’ rather than ‘how do we have a win-win?’” (R3). The group agreed unanimously on the need to “cut through the fog” (R2) of overlapping agendas,

and to think collectively about their shared identity as professional hydro-citizens. Thus, they identified a desire to focus on conversational process rather than concrete outcomes, in order to reveal underlying concerns and articulate first principles. These responses, which confirmed researchers' earlier impressions of the communicational difficulties in a sector where "absolute" operational objectives sometimes appeared to be at cross-purposes, lent weight to Harvey's contention that relational concepts of space are "embedded in or internal to process" (2006, 274).

Relationships, in other words, need to be worked at, and the work entailed in this should not be underestimated as a form of "action". The version of PAR that underpinned the group's conversations was simply one which laid aside the identification of particular objectives, in favour of a process of ongoing responsiveness to each other and to the shifting conversational. Indeed, according to Rogé (2018, 1047), such spontaneity is more integral to the "iterative cycles of PAR" than goal- or target-setting, because "improvisational skill increases receptivity to emerging pathways for investigation" and thus enables participants "more effectively [to] address the problems that they face." This observation also usefully aligns PAR with PaR (Practice as Research) a term deployed in certain arts disciplines to denote the use of creative practice as a tool for furthering critical research (Nelson 2013). From the outset, these stakeholder conversations were conceived as a form of dialogic art practice in their own right (Kester 2004).

3.2 *Creative Conversations*

In dialogic art (also referred to as relational art), the artist functions not as a maker of objects or performances for consumption by others, but as one who frames and facilitates dialogues between participants which might not otherwise take place. S/he is a context provider more than a content provider (as British artist Peter Dunn has put it), who seeks to create "an open space where individuals can break free from pre-existing roles and obligations, reacting and inter-acting in new and unforeseeable ways" (Kester 2004:6). The key mediums used by such artists, Kester proposes, are time, space and interpersonal encounter: "a critical time sense" is adopted, "that takes into account the cumulative decisions and actions"; a form of "spatial imagination" is employed "to comprehend and represent complex social and environmental systems"; while "dialogical and collaborative encounters" are used as a means of interrogating these temporal and spatial concerns (Kester 2004:68-69). These three mediums might also be considered, in dramatic terms, as plot (the temporal outworking of action), setting (the place of enactment), and characters (those who act)—with the proviso that these are understood both in microcosmic and macrocosmic terms. That is to say, the "play" consists of both the interaction between the participants in the room, over the duration of their conversation(s), and the wider geo-social drama they are collectively seeking to respond to.

At each meeting of this Hydro-Citizenship stakeholder group, the conversation that unfolded was genuinely spontaneous and improvised. These were intentional interactions which nonetheless had no pre-set agenda and sought instead to be as responsive as possible to

the immediate, relational dynamics of the group. Facilitation was conducted with a minimum of directive interference from the researcher-chairperson. Typically, meetings would begin with a brief check-in period during which participants would outline their most pressing, current concerns. Often there were identifiable connections to be made between these initial offerings, and the conversation would then proceed from these points of intersection. However, the real point of “heat” or shared concern in the discussion might only be identified, collectively, after various subsidiary points had been laid aside. The chair’s role sometimes involved pointing out or naming these emergent concerns, and then posing questions to the group which might clarify exactly what was at issue. These questions were shaped by responsive curiosity rather than by preconceived objectives: adopting the role of “ignorant schoolmaster” (Rancière 1991), the chair would challenge participants to articulate, in conversational terms legible to each other, the often unvoiced assumptions informing their organisations’ perspectives and operating practices. This was a mutual learning process with no right or wrong answers.

A key component in ensuring relaxed, informal exchanges was the physical setting of the meetings. Early sessions took place in an open-plan office space with large windows, overlooking the River Aire in central Leeds. Temporarily occupied by the social enterprise Canal Connections, this space was populated with comfortable, second-hand furniture and various makeshift exhibits. A more relaxed environment than the formal, boardroom settings that participants were accustomed to, this space lent itself to playful, improvisatory conversation. Subsequently, the group found a new home at Open Source Arts, a former industrial unit converted into an artists’ studio and café. This space was inundated during the major flood incident on the Aire at Christmas 2015, and subsequently became a volunteer hub for the flood recovery effort. Here, the relational connectivity between the water environment, the arts, and the local community was particularly keenly felt.

3.3 Performative responses

Central to the Hydro-Citizenship project’s methodology was the generative, cyclical flow between private conversations, such as these stakeholder meetings, and public creative outcomes. Insights derived from the former were used to structure and inform the making of site-specific performance presentations which sought to engage audiences with issues connecting the water environment, community and citizenship. Here too, PaR (Practice as Research) was the animating methodology: the aesthetic *form* of each performance was determined by the critical *content* emerging from research dialogues, as well as the *context* of its enactment. Their staging sought to “let water appear”, by variously incorporating the river itself as a performance element alongside the human. Mostly made for presentation outdoors, in shared public spaces during local festivals, these pieces were free of charge, and designed to appeal in different ways to both children and adults. Some spectators were drawn by event advertising, others were simply passers-by who stayed to watch and listen. Public responses to these presentations were sought through verbal or written feedback, and then fed back into the iterative research process, as prompts for reflection and further discussion.

4.0 Results and Analysis

4.1 Development of the stakeholder network

The concept of “hydro-citizenship” proved a fruitful starting point in developing relationships with professional stakeholders. During initial, exploratory interviews, the term was introduced not as a predefined concept but as an open question: what might it mean to the respondent? Initial reactions typically positioned the general public as citizens who needed to become more conscious of their own water responsibilities: hydro-citizens would not flush anything down their toilets except “pee, poo and paper”; they would not pour fat down their sinks; they would develop personal and community flood plans; they would not replace grassy front yards with impermeable driveways. These are all issues around which greater public awareness is needed, but their prevalence in these early discussions indicated a habitual emphasis on the need to remove obstacles from engineered systems. As one respondent wryly reflected, “obviously I’m coming at it from a point of view where we have to deal with the consequences [of unthinking behaviour]” (R4)ⁱⁱ.

One notable consequence of the developing research conversations was that this instinctive, us-versus-them approach began to be replaced by more critical reflection around participants’ own language and assumptions. The speaker cited above, for example, observed that the emphasis on technical responsibilities, demanded by her professional role, has often obscured the ethical motivations that led her to become a water engineer in the first place. Other avenues of specialization that she had investigated as a student, such as aeronautical engineering, seemed only to benefit wealthier segments of the population, whereas water is a universal necessity. “Other people are important,” she ventured: “poor people are also important” (R4). Why then characterise these other people only in terms of their more problematic behaviours? Could the absolute space of operations be complicated by the relational space of citizenship?

The process of exploring the novel concept of hydro-citizenship seemed to be greatly assisted by participants’ awareness that this was arts-based research. The spontaneous creativity permitted by the open-ended conversation format of the monthly stakeholder meetings led to some surprisingly playful propositions. “What about thinking of the waterway itself as a citizen?”, one participant asked at that first group meeting (R5). This prompted much discussion, as the River Aire became “characterised as a person – call it Fred or whatever” (R1). It was noted that this Fred (the name, it was agreed, could be gender-neutral) was a mutual friend of everyone in the room, the central networking figure who linked them together: “everybody wants to be Fred’s friend for their own purposes, but they understand that other people are friends with Fred, too” (R1). This sense of the water having its own agency, as a connector between environmental interests, business interests, leisure interests, and so forth, resonated strongly with the group – not least because it counter-acted the more familiar institutional tendency to treat watercourses as separators, as boundary-lines between jurisdictions. Other questions swiftly followed: How would Fred want us all to relate to each other? Could the group somehow advocate, collectively, for Fred’s interests? Participants expressed enthusiasm for considering themselves not just as professional hydro-

citizens but as personal friends of Fred. The river was a common acquaintance who stirred real warmth of feeling among participants. After that first meeting, choosing a name for the group was straightforward.

The Friends of Fred (FoF) met on a monthly basis for over three years, with occasional months off during holiday periods. Meetings were eventually suspended in May 2018, but the group's unexpected longevity meant that it had outlived the funded period of the parent research project—and underlined the value that participants had found in continuing to meet. FoF meetings attracted a core of regulars as well as others whose attendance was more occasional, and throughout the life of the group, new attendees were attracted as others moved on. The underlying approach remained constant, however, with specific agendas and action plans being eschewed in favour of reflective, often playful conversations that allowed participants to process shared concerns. Perhaps most importantly, a sense of mutual friendship, cohering around a common sense of responsibility for the water environment, afforded an attention to the human rather than technical aspects of their professional positions. “We’re all people, aren’t we?”, one respondent noted: “We’ve got these really pressured, challenging jobs but in this space, for a couple of hours, we can say, ‘right, OK, this is about people. What I do is about people’” (R6)ⁱⁱⁱ. “I am a very technical person,” concurred another, “but having people like me exposed to these kind of challenges gets us thinking in a completely different way. And I get so much from it. . . . It’s understanding that society isn’t a computer” (R7)^{iv}.

4.2 *Rehearsing Citizenship*

In May 2017, with the formal period of Hydro-Citizenship research drawing to a close, researchers asked FoF attendees to reflect on why they continued to attend these meetings. The responses emphasised a sense of refreshed energy and expanded focus that individuals felt they gained from the group's discussions: “this is my favourite meeting of the many meetings I go to, just because it’s different views and different people right across the spectrum” (R8); “It’s a chance to look outside myself, so I look forward to this meeting as an opportunity to see things in a broader scale” (R9)^v. Spatially, the “broader scale” of discussions varied from meeting to meeting: sometimes the river was considered on a catchment-wide basis, while at other times, quite tightly defined sections of the Aire were discussed, particularly as it flows through central Leeds. Similarly, conversations would move readily between the “three ecologies” (Guattari 2000), connecting environmental concerns with community contexts (“social ecology”) and questions of personal wellbeing (“mental ecology”). These opportunities to shift perspective had a significant influence on the thinking of several participants. As one group member noted, he had begun attending FoF primarily for pragmatic reasons, because as the manager of a riverside business, he saw it as a networking opportunity. However, in coming to understand “the one thing we all have in common”, he had begun “looking outside our four walls at this district we want to be part of, and [asking] how can we contribute to that?” (R10).

This collective will among FoF participants to “make a difference” had, they told researchers, been manifested in many ways external to the network itself. While avoiding the

identification of collective action objectives, the group's continuing willingness to tackle difficult questions in a spirit of mutual trust had emboldened participants to think more creatively within their everyday professional contexts. Several participants reported that FoF had become a kind of rehearsal room for innovative thinking with respect to the water environment:

It's a good space to put your thoughts forward, and to hear yourself saying it. You can get confidence or reassurance from that, as well as learning how you need to tweak your points. It's just a conversation, but if it's been said at this forum, then I know several people here think the same way. So I have confidence also to say it at the Chamber of Commerce. It works in terms of giving yourself that advocacy to go and say it at other meetings (R11).

Another participant, employed at Yorkshire Water, suggested that discussions around the term "hydro-citizenship" itself had prompted her to encourage colleagues to reconsider their use of the term "customer", in relation to domestic water-users: "If you're a customer, you pay for a product. You don't have to take responsibility for it. But we all have an impact on what ends up in sewage pipes or in the river, so it's not just about being a customer of water" (R7). If water utilities want homeowners to rethink their own water behaviours, this speaker concluded, then more careful thinking is needed about how they are addressed.

Other participants concurred that, as a forum, FoF had indirectly informed policy-making in a number of ways. Shared understanding about the need for collective action, across organisational jurisdictions, had led group members to exercise soft influence on each other's behalf: "It's that word in somebody's ear. The odd little email" (R2). They had also modified approaches to their own work: "there's a little bit of FoF-type flavour happening in the way that you write a brief or the way you deliver a project" (R1). "If you tap into people's sense of 'this is why I'm here, this is what I do,'" another respondent offered, "they will carry it on in whatever meeting they're in and whoever they're with. [To] have generated a common purpose, that's really powerful" (R6).

4.3 After the flood: extending creative dialogues

The benefits of the FoF forum were particularly strongly felt during 2016, in the aftermath of the severe, fluvial flooding that had hit many parts of the north of England at Christmas, 2015. Storm Eva brought heavy rainfall onto landscapes already waterlogged by two months of unusually high precipitation, and on Boxing Day (December 26th) several rivers broke their banks. In Shipley, where in normal conditions the gauge level for the River Aire is between 0.35m and 1.10m, a peak level of 2.81m was reached—the highest ever recorded. In Leeds, for the first time in living memory, parts of the city centre were completely submerged: the flooding here was later designated as a 1-in-250-year event (Fig 1).

Fig 1: The area around Baildon Bridge in Shipley, West Yorkshire, in the aftermath of the Boxing Day flood (27 December 2015). Drone image courtesy of Brian Tuxford.

The flood and its aftermath proved professionally challenging and emotionally stressful for several members of the FoF network, as an extreme reality tested hypothetical scenario planning to breaking point: “We have incident teams that are fairly well drilled,” noted one senior flood risk manager, “but when you’re actually managing an incident of this scale, it’s carnage” (R1). FoF meetings served a particularly valuable, reflective function for participants during this period, as a shared sense of trust and confidentiality enabled participants to process their experiences in dealing with the fallout from such a major incident. The flood also provided an opportunity for the Hydro-Citizenship project to connect its community- and stakeholder-level engagement activities. In an experimental attempt to bring together members of the affected communities in Shipley with members of the FoF network, a “community conversation” was hosted at Shipley’s Kirkgate Centre, in March 2016, to discuss the impacts of the flood in that area. This meeting was independently facilitated by researchers, using an open, non-hierarchical dialogue approach similar to that used in FoF meetings. Aside from the facilitator, all present were seated around café tables, so that professionals mingled with local residents, rather than being elevated to platform level, as authorities (Fig 2).

Fig 2: Participants at the post-flood community conversation at Kirkgate Centre, Shipley, March 2016. Photograph: Maggie Roe.

This arrangement was designed to ease the pressure on those Environment Agency and local council representatives who had agreed to attend. FoF discussions had highlighted a problem with post-flood community meetings, when called by responsible agencies, as these can too easily become confrontational affairs, with the public venting their frustration at the organisers. Tensions can be further exacerbated if professionals prove reluctant to engage with the public on a relational, human level: “A lot of people within organisations struggle with that element,” one stakeholder noted at the previous month’s FoF meeting:

they feel like, “I’m a real person at home, but this is my job and I’m only comfortable talking about the technical elements of it.” But we really need people going into those situations to be able to say: “I’m going to talk to you about river levels, but I’m also going to talk to you about real life.” Or I’ll just stop talking and say, “That’s awful” (R1)^{vi}.

At the Shipley meeting, the professionals present modelled this more empathetic mode of response. They later noted that this had been possible in part because of the independent, third-party facilitation: “It goes down a bit easier when you’ve got someone chairing who already has some standing in the community” (R3) (Fig 2). Although the discussion was

inevitably tense at times, difficult questions were handled without defensiveness. Those who had been displaced from their homes were able to narrate something of their experiences, and voice personal frustration, without feeling they had to frame these responses as accusations or demands. Researchers were later able to follow up with some of the flood-affected residents who attended this event, conducting personal interviews to gather detailed accounts of the flood from a first-hand perspective.

4.4 Performing populated landscapes

The flood narratives from Shipley residents were eventually distilled and arranged into a one-man storytelling performance, *Too Much of Water*. This was first presented as part of the annual Saltaire Festival (September 2016), on a grassy, riverside spot in Roberts Park that had itself been under water the previous Christmas. (Saltaire mill village, a UNESCO World Heritage Site, lies within Shipley's town boundaries). Led by the interview data, the performance focused attention on some of the smaller, more personal details of how the flood and its aftermath had impacted on the everyday lives of those affected. The narrator emphasised these "little stories" rather than the familiar, mediatized spectacle of flood damage, and accordingly—in this intimately-scaled performance—the main characters were represented by small, wooden dolls, placed into an improvised 3-D map of the Shipley river district (Fig 3). The river was represented by a bolt of blue cloth (running parallel with the Aire itself), which could be fanned out to indicate the spread of floodwater in different directions. The story cut back and forth between the characters' accounts of their experiences, in an hour-by-hour reconstruction of the flood's progress^{vii}. This reflected the fact that, in interviews, respondents all had surprisingly clear recall of the clock times when key events occurred.

Fig 3: Storyteller Steve Scott-Bottoms presents *Too Much of Water*, Saltaire Festival, Shipley, September 2016. Photograph: Tori Watson.

Harvey notes that “the relational terrain is . . . extremely challenging” because the interplay of “political and collective memories” cannot be readily situated “on a grid or a map” (2006, 274). Arguably, however, by mapping personal flood memories onto a miniature, populated landscape, *Too Much of Water* achieved just that. Proving unexpectedly impactful with audiences, the piece’s modest scale and easy portability enabled it to be presented again, by invitation, in a range of contexts over the next three years, in Shipley, Leeds and beyond. Professional audiences, from flood managers to insurance agents, proved particularly engaged by it^{viii}. While these groups have extensive experience in dealing with such incidents, their attention tends to be focused on the “absolute space” of technical models and statistics. “Something like this is so important,” one senior flood manager commented of the play, in a post-performance discussion, because

you’re seeing it played back from the point of view of the people that were in it. As an incident duty manager, you’re in a room that’s not flooding, and you’re not surrounded by people who are pulling carpets up, or packing things into their loft . . . And so it’s very easy to forget why you do what you do. Even as someone who lives and breathes flood risk, you forget that the impacts are so stark^{ix}.

Researching the affective dimensions of flooding, Siegrist and Gutscher (2008) found that roughly a third of the flood victims they interviewed highlighted feelings of uncertainty and

insecurity, fear and shock, and was among the worst continuing outcomes of their flood experience. This contrasted with the nonvictims the researchers spoke to, hardly any of whom imagined that the emotional impacts of the flood event would be so significant. The personal memories of those affected by the Shipley flood (recounting substantial stress with a certain stoic, dark humour) thus made *Too Much of Water* unexpectedly impactful for audiences: “The performance brought home to you the real human cost of flooding,” one insurer commented in written feedback: “[it was] unlike anything I have ever seen before and it was extremely well done.”^x

The disjuncture between personal and professional experiences of flooding was highlighted by *Too Much of Water*’s verbatim use of two, automated EA telephone warnings, as relayed to Shipley residents before and during the flood. Kindly supplied by a regular FoF attendee, these “robo-call” texts were inserted into the story’s chronological account of the flood, as experienced by those affected. The narrator offered no editorial comment on these warnings, leaving spectators draw their own conclusions. Yet placed into relational context, the words sounded awkward, impersonal, and frustratingly non-specific. This prompted a degree of soul-searching among some of the professionals who witnessed the piece. As another EA-based Friend of Fred put it: “Just the language in those flood warnings. You can hear the emergency planners writing it, but what does it mean?” (R6). In a personal interview, this respondent was asked whether there is still a problem with flood events being viewed primarily as a conceptual, technical problem at the professional level. Her response was blunt: “Oh, very much so. Yes” (R6)^{xi}. Performance and storytelling were recognised, here, as offering a valuable, people-centred corrective to the water sector’s “expert” perspective.

Another performed response to the Boxing Day flood, directly informed by FoF, presented a more constructive take on the “hydro-citizenship” of water professionals. *After the Flood* was staged in June 2016, at the annual Leeds Waterfront Festival, and offered an interactive reflection on the inundation of six months earlier. Passing festival-goers, of all ages, could opt into this experience at any time during a four-hour period on afternoons during the festival. Groups of spectators embarked on a looping, riverside tour in the vicinity of Leeds Station, which took them across two bridges and back to their starting point. At six stopping points along the route, spectators would discover actors who presented short scenes to each new group coming past. These sequences (later adapted as short videos for Youtube^{xii}) had been developed in part through FoF discussions, and each was designed to illustrate a different, proactive response to flooding. For instance, in the first scene, a character inspired by a grassroots flood response co-ordinator addressed spectators as if they were volunteers responding to a call he had posted on Facebook. In another scene, an “Agency Man” explained the need to juggle many different practical and political pressures, when planning new flood defence schemes. He demonstrated this, quite literally, by juggling.

Fig 4: Kat Martin as ‘Poppy’ in Scene 2 of *After the Flood*, Leeds Waterfront Festival, June 2016. Photograph: Steve Scott-Bottoms.

A key feature of *After the Flood* was the way it played with site and scale. In one scene, two actors playing water engineers (as a kind of comedic double act) pointed spectators’ attention to the existing flood defences in the vicinity of Leeds station, and explained how these had mitigated impacts in that area on Boxing Day. In another scene, which alluded to the more serious flood damage that had occurred upstream in the Kirkstall area of the city, a family restaurant was represented by a doll’s house, which looked very small and vulnerable against the flow of the actual River Aire, which was positioned as a backdrop to the scene (Fig 4). An actor playing the daughter of the restaurant’s owners encouraged spectators to don rubber gloves and help relay tiny, flood-damaged items, from hand-to-hand, between the doll’s house and a small, yellow skip. Many spectators reported on how strangely moving this activity felt, partly because of the smallness of the items involved. In yet another scene, the scale of attention shifted again to the wider, Yorkshire landscape. A character called “the Gardener” used a potted plant and a watering-can to demonstrate a simple point about how permeable landscaping absorbs water. He then led spectators into the Dark Arches, where the River Aire flows underneath Leeds Station through long tunnels. Gesturing upstream, toward the light at the end of the tunnel, the Gardener spoke how about “soft engineering” methods such as tree-planting, if applied in greener, upland areas, might in future mitigate the amount of water flowing downstream into the city (Dadson et al, 2017). This character’s practical, creative ideas suggested that flood preparedness can be informed

by positive emotions as well as fear and apprehension. As Terpstra argues (2011, 1660), risk managers need to appeal to a range of affective registers if they are to galvanise public response.

After the Flood was very well received by audiences: “a brilliant experience”; “entertaining, informative and creative”^{xiii}. Some of the more detailed feedback made clear that the performance’s shifts in scale had affected spectators’ sense of the urban spaces around them: “it made me think of the city differently . . . it made me think about the connection between the city and the surrounding countryside - and the journey of the water that humans have tried to control/manage, etc. It did all this in a clever, funny and gentle way, without forcing a message”^{xiv}. The sense of space evoked by the piece was relative and relational, rather than absolute, as the water professionals who saw *After the Flood* also acknowledged. One wrote how “very insightful” he had found the experience, “viewing the effects of the flood from many different perspectives!”^{xv}

After the Flood demonstrated to professionals the potential value of imaginative, performative methods for enhancing public understanding of these issues, and led to direct collaborations with the partner organisations in the Leeds Flood Alleviation Scheme (FAS). These included *Weir Science*, presented at the 2017 Leeds Waterfront Festival (see Scott-Bottoms 2019), and creative contributions to the public consultation around the second phase of FAS in October 2017^{xvi}. Looking back in a retrospective interview, one Friend of Fred who had been closely involved with these initiatives commented to researchers that “the drama work you’ve done, I think the persistent presence of it – over a number of years – has really challenged us, in a very non-aggressive way. It’s really shown the art of the possible, in the sense that there are different ways of doing this” (R6). Rather than using drily technical messaging to engage members of the public with water issues, she noted, the public performances created during the Hydro-Citizenship project had stimulated imaginations and emotions. Operating as a valuable complement to the FoF conversations, they had encouraged participating professionals to think about the bigger, relational picture, and the pressing need to communicate creatively with the public about shared responsibilities for the water environment. Researchers had demonstrated the value of storytelling methods in this engagement task, the respondent concluded: “And so I should, I can. I can think about the story of the Aire. You know, it’s not an add-on, it’s not a nicety. That is actually my job” (R6)^{xvii}.

5.0 Discussion and Conclusion

While some significant and useful conclusions for working with stakeholders and communities in local water environments can be identified, the research described in this paper has limitations. This was a case study conducted in one specific region, with self-selecting participants. Nevertheless, our findings point to further possibilities for both professional training and public engagement, which the authors are continuing to explore. Moreover, if appropriate facilitators are available, the models of participation described here are readily replicable. Since meeting space was donated, Friends of Fred gatherings required only the cost of refreshments (which participants themselves covered when our research

funding ended). Similarly, the performances detailed here were made with minimal budgets, relative to other arts contexts, because they utilised existing public spaces as their “settings”, in which a limited number of performers interacted directly with audiences. The major investment in making them was the time spent listening to those whose stories were eventually depicted.

The potential benefits of such participatory initiatives are summarised, perhaps, by those final comments in the previous section. They suggest a significant shift of awareness on the part of the respondent—an awareness that has to do with her own place *in relation* to others. As we have seen, the technical orientation of water-sector professions tends to posit lay people in fixed terms, as static figures in absolute space, acted upon by experts. What does it mean, then, for a senior manager to posit that “I should, I can” engage in exploring “the story of the Aire” with these others, and that this “actually is my job”? Part of the story here is story itself. The sharing of narratives - whether in the anecdotal, conversational context of FoF meetings, or in the more structured form of public performances - enables mutual learning from each other’s experiences.

Stories can overcome perceived “knowledge gaps” between professionals and lay people, children and adults, because they can be heard and understood differently, according to individual background and perspectives. They need not (and we did not) push messages or assume particular interpretations. Yet they can invite empathy and understanding for the people depicted in them: listeners are invited to place themselves in the position of another, and to consider the practical and emotional significance of their experiences. As such, storytelling is an inherently relational practice, and our research suggests that it may be a particularly valuable tool in the water context. In water environments, people with many different personal and professional perspectives have concerns for the same shared, physical spaces, and these overlapping interests can sometimes prompt confusion or misunderstanding. Yet since “Fred” has so many “friends”, they may also have much to learn from each other. For some of our research participants, the sharing of perspectives sharpened an awareness “that society isn’t a computer” but rather, a collaborative improvisation; that “other people” need to be worked with, not worked on. These other people are not simply “customers”, who may or may not “buy” whatever product is on offer, but fellow citizens with necessarily proactive roles to play in the water environment.

Of course, the Friends of Fred were a voluntary group of participants who were drawn to this research because, on some level, they already believed these things. Yet the project’s endeavours arguably functioned as “acts of citizenship” in the sense outlined by Isin and Nielsen (2008). Such acts cannot, they emphasise, anticipate particular outcomes, because they function to challenge existing dispensations rather than to impose new responsibilities on others. Yet acts of citizenship may facilitate “answerability” in respondents. Answerability is distinguished from responsibilities or obligations because where the latter are usually impersonal and structural, the former is personal—it is constituted by a call that cannot be anticipated: “The call comes from and is directed towards the being that I am. Yet the call is

something that I neither planned nor willed. It calls. . . . By understanding the call we have listened to our own possibility of existence” (Isin 2008, 32-33). And so I should. I can.

Change of the sort that Isin identifies is, he argues, necessarily disruptive of existing habits, and thus often comes about during periods of disruption—when the need for change has already become unavoidably apparent. The year following the Boxing Day flood of 2015 was one such period, and it was here that the FoF group arguably found its *raison d’etre*. In a meeting facilitated by outsiders to the sector, with no specific goals to be accountable to, the impact and implications of this major event could be rehearsed openly without blowback, and the need for various forms of cultural change within the water sector could be identified. Participants also shared difficult, emotional experiences in a spirit of established trust, to the extent that - during this period - Friends of Fred was often referred to, only half-jokingly, as providing a form of “group therapy.”

The use of this term was initially disconcerting for researchers, who had no therapeutic training, but subsequent research suggested that it may have been oddly appropriate. Historically, group therapy shares a common root with both action research and improvisatory drama: all three evolved from the 1930s social experiments of J.L. Moreno (later famous as the creator of psychodrama)^{xviii}. What connected these seemingly disparate threads, for Moreno, was the willingness of participants to be collectively open and responsive to each other, in the time and place of their encounter, rather than being reliant on pre-existing frameworks (or “conserves”, as he called them) to guide their actions. Moreno referred to the practice of such group work as “spontaneity training.” This training in relationality, he proposed, could inculcate in participants an ability to remain creative and emotionally resilient in even the most challenging of circumstances, rather than falling back on established routines which may be unfit for purpose (Moreno 1934).

FoF meetings certainly had something of this quality, providing participants with “an island of stability” (R3) - a context of shared understanding and peer support where they could rehearse innovative thinking that could then be applied in their professional contexts. The perceived value of the group during (and indeed after) the research period suggested that others in the water sector - and perhaps other, comparable technical professions - might also benefit from collaborative forms of mutual learning that emphasise playfulness, conversation, and storytelling as tools for more becoming confident and comfortable with contingent relationality. That said, it is also very easy to fall back on institutionalised habits and modes of thinking if we do not have regular opportunities to rehearse alternative perspectives. In encounters since the formal end of the research, the respondent (R6) who expressed a sense of “answerability” to the perceived challenge of the Hydro-Citizenship project has referred to researchers’ presence as being “like a prick of conscience”; a reminder of unfinished business. The task of cultural change in the water sector is ongoing, as is the challenge of developing hydro-citizens, rather than hydro-technocrats.

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References

- Adams, D. 1992. "Joseph Beuys: Pioneer of a Radical Ecology." *Art Journal* 51(2):26-34.
- Bakker, K. 2003. *An Uncooperative Commodity: Privatizing Water in England and Wales*. Oxford: Oxford University Press.
- Batt, H. 2017. *Creating a pioneering model of river stewardship*. Available <https://environmentagency.blog.gov.uk/2017/06/30/creating-a-pioneering-model-of-river-stewardship/> [accessed 04.09.19]
- Benson, D., Fritsch, O., Cook, H. and Schmid, M. 2014. "Evaluating Participation in WFD river basin management in England and Wales: Processes, communities, outputs and outcomes." *Land Use Policy* 38: 213–222 .doi.org/10.1016/j.landusepol.2013.11.004
- Bottoms, S. 2017. "The Agency of Environment: Artificial Hells and *Multi-Story Water*." In Harpin, A. and H. Nicholson, eds. *Performance and Participation*. London: Palgrave, pp.167-188.
- Bottoms, S. and McEwen, L., 2014. *Multi-Story Water: Sited Performance in Urban River Communities*. Report available at https://issuu.com/martinharriscentre/docs/drama_multi-story_water_report
- Chen, C., MacLeod, J. and Neimanis, A. 2013. "Introduction: Toward a Hydrological Turn?" In Chen, C., MacLeod, J. and A. Neimanis, eds. *Thinking with water*. Montreal/Kingston: McGill-Queen's University Press. pp.4-22.
- Chevalier, J.M. and Buckles, D.J. 2019. *Participatory action research: Theory and methods for engaged inquiry*. Oxford: Routledge. 2nd edn
- Cohen, A. and Davidson, S. 2011. "The watershed approach: challenges, antecedents, and the transition from technical tool to governance unit." *Water Alternatives* 4(1):1-14.
- CoE (Council of Europe). 2000. *The European Landscape Convention* text. Available www.coe.int/europeanlandscapeconvention
- Dadson, S., Hall, J. W., Garrick, D., Sadoff, C., Grey, D., and Whittington, D. 2017. "Water security, risk, and economic growth: Insights from a dynamical systems model." *Water Resources Research*. <https://doi.org/10.1002/2017WR020640>
- Dicks, H. 2014. "A phenomenological approach to water in the city: towards a policy of letting water appear." *Environment and Planning D: Society and Space* 32(3): 417-432.
- Durán Vian, F., Serrano Martínez, M. and Pons Izquierdo, J.J. 2018. "Citizen participation as a social shift tool in projects of urban fluvial space recovery: A case study in Spain." *Land Use Policy* 38:213–222 <https://doi.org/10.1016/j.ufug.2018.03.008>
- Evans, B. and Reid, J. 2014. *Resilient Life: The Art of Living Dangerously*. Cambridge: Polity.

- Gartin, M., Crona, B., Wutich, A. and Westerhoff, P. 2010. "Urban Ethnohydrology: Cultural Knowledge of Water Quality and Water Management in a Desert City." *Ecology and Society* 15(4): 36.
- Guattari, F. 2000 [orig. 1989] *The Three Ecologies*, trans. Ian Pindar and Paul Sutton. London: Continuum.
- Harvey, D. 2006. "Space as a Keyword." In Castree, N. and D. Gregory, eds. *David Harvey: A Critical Reader*. Oxford: Blackwell. pp.70-93.
- Illich, I. 1986. *H2O and the Waters of Forgetfulness: Reflections on the Historicity of "Stuff."* London: Marion Boyars.
- Isin, E. F. and Nielsen, G.M. 2008. *Acts of Citizenship*. London: Zed Books.
- Isin, E.F. 2008. "Theorizing Acts of Citizenship." In Isin, E.F and G. Nielsen, eds. *Acts of Citizenship*. New York, Zed Books. pp. 15-43.
- Jennaway, M. 2008. "Aquatic Identities, Fluid Economies: Water Affinities and Authenticating Narratives of Belonging in East Timorese Myth and Ritual." *Oceania* 78:17-29.
- Junker, B., Buchecker, M. and Muller-Boker, U. 2007. "Objectives of public participation: Which actors should be involved in the decision making for river restorations?." *Water Resources Research*, 43, W10438 doi: 10.1029/2006WR005584.
- Kester, G. 2004. *Conversation Pieces: Community and Communication in Modern Art*. Berkeley, CA: Univ. of California Press.
- Landström, C., Whatmore, S.J., Lane, S.N., Odoni, N.A., Ward, N. and Bradley, S. 2011. "Coproducing flood risk knowledge: redistributing expertise in critical 'participatory modelling'." *Environment and Planning A*, 43:1617-1633.
- Latour, B. 1993. *We have never been modern*. London: Prentice Hall.
- Linton, J. 2010. *What is Water? The History of Modern Abstraction*. Vancouver, UBC Press.
- Massey, D. 2005. *For Space*. London: Sage.
- Moreno, J.L. 1934. *Who Shall Survive: A New Approach to the Problem of Human Interrelations*. Washington: Nervous and Mental Disease Publishing Co.
- Nelson, R. 2013. *Practice as research in the arts: principles, protocols, pedagogies, resistances*. Basingstoke: Palgrave Macmillan.
- Pitt, M. (2008) *The Pitt Review: Learning Lessons from the 2007 Floods – Final Report* (June 2008). London, Cabinet Office. Available: https://webarchive.nationalarchives.gov.uk/20100702215619/http://archive.cabinetoffice.gov.uk/pittreview/thepittreview/final_report.html
- Rancière, J. 1991. *The Ignorant Schoolmaster: Five Lessons in Intellectual Emancipation*, trans. Kristin Ross. Stanford: Stanford University Press.
- Roe, M.H. 2018. "Landscape and participation." In: Howard, P., Thompson, I.H. and Waterton, E. (eds) *The Routledge Companion to Landscape Studies*. Oxford: Routledge. 2nd edition pp.402-417.
- Roe, M.H. and Taylor, K. 2014. *New Cultural Landscapes*. Oxford, Routledge.
- Roe, M.H. and Scott-Bottoms, S. 2020. "Improvisation as Method: Engaging 'hearts and minds' in the landscape through creative practice." *Urban Forestry & Urban Greening*, 47:126547 <https://doi.org/10.1016/j.ufug.2019.126547>

- Rogé, P. 2018. "Improvisatory Activist Scholarship: Dance Practice as Metaphor for Participatory Action Research." *ACME* 17(4):1045-1066.
- Scott-Bottoms, S. 2019. "The Rise and Fall of Modern Water: From Staging Abstraction to Performing Place." *Theatre Journal* 7(4):415-435. doi: 10.1353/tj.2019.0092
- Selman, P., Carter, C., Lawrence, A. and Morgan, C. (2010) "Re-connecting with a neglected river through imaginative engagement." *Ecology and Society* 15(3):18. [online] <http://www.ecologyandsociety.org/vol15/iss3/art18/>
- Siegrist, M. and Gutscher, H. 2008. "Natural hazards and motivation for mitigation behavior: People cannot predict the affect evoked by a severe flood." *Risk Analysis* 28(3):771–778.
- Smith, J.L. 2008. "A critical appreciation of the 'bottom-up' approach to sustainable water management: embracing complexity rather than desirability." *Local Environment* 13(4): 353-366. doi.org/10.1080/13549830701803323
- Swyngedouw, E. 2009. "The Political Economy and Political Ecology of the Hydro-Social Cycle." *Journal of Contemporary Water Research & Education* 142:56-60.
- Terpstra, T. 2011. "Emotions, Trust, and Perceived Risk: Affective and Cognitive Routes to Flood Preparedness Behavior." *Risk Analysis* 31(10):1658-75.
- Whatmore, S.J. and Landström, C. 2011. "Flood apprentices: an exercise in making things public." *Economy and Society* 40(4):582-610.

ⁱ Meeting transcript, Leeds Dock, 6 January 2015.

ⁱⁱ Personal interview, Leeds, 17 March 2015. Henceforth, respondents will be numbered sequentially (R1, R2, etc.). Recurring numbers indicate recurring speakers.

ⁱⁱⁱ Personal interview, Leeds, 11 May 2017.

^{iv} Personal interview, Leeds, 12 April 2015.

^v Meeting transcript, Leeds, 5 May 2017.

^{vi} Meeting transcript, Leeds, 5 February 2016.

^{vii} Full details, photographs and script of *Too Much of Water* are available online at http://multi-story-shipley.co.uk/?page_id=2094.

^{viii} For a full listing of performance dates and locations, see URL in note vii.

^{ix} Post-performance discussion of *Too Much of Water*, Workshop Theatre, Leeds. 4 September 2017.

^x Spectator responses to *Too Much of Water*, documented online at <http://multi-story-shipley.co.uk/?p=2404>.

^{xi} Meeting transcript, Leeds, 5 May 2017.

^{xii} Video of *After the Flood* can be accessed online at http://multi-story-shipley.co.uk/?page_id=1824.

^{xiii} Spectator responses to *After the Flood*, taken from the Visitors' Book in which they were invited to leave comments at the end of the performance.

^{xiv} Email feedback following revival of *After the Flood*, September 2017.

^{xv} Environment Agency feedback, Visitors' Book.

^{xvi} Full details online at http://multi-story-shipley.co.uk/?page_id=2697.

^{xvii} Meeting transcript, Leeds, 5 May 2017.

^{xviii} The term "action research" is usually credited to the social psychologist Kurt Lewin, but Lewin regarded Moreno as a colleague and acknowledged a significant intellectual debt to him.