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Narratives and Memories for Resilience: Exploring the Missing Link between Engagement and Water Governance in Brazil and the United Kingdom

Danilo Rothberg¹ & Joanne Garde-Hansen²

Abstract

From an interdisciplinary, communication and trans-cultural perspective, participation in water governance should include non-political activities and engagement. In Brazil, it is mandatory for decision-making bodies to include society's active participation, a democratic principle that speaks to a concept of 'hydro-citizenship' that is currently being explored in the UK, wherein top-down water governance is giving way to community-led adaptation planning. The opportunities for social and cultural learning have been explored in our UK and Brazil collaborative research. We offer relevant insights about the value of story, narrative and memories as emerging components of resilience beyond collective, community or national political containers. We argue that a missing link in the literature is the one between narratives, social memory and environmental resilience as a personally shared culture water. These insights have the potential to address participation and governance gaps through recourse to a trans-cultural understanding of socially networked communication about water management.

Resumo

De uma perspectiva interdisciplinar, transcultural e comunicacional, a participação na governança da água deve incluir atividades não políticas e engajamento. No Brasil, é obrigatório que os órgãos de decisão incluam a participação ativa da sociedade. Este é um princípio democrático que fala de um conceito de 'hidro-cidadania' que está sendo atualmente explorado no Reino Unido, em que a governança centralizada da água está dando lugar ao planejamento de adaptação liderado por comunidades. As oportunidades de aprendizado social e cultural foram exploradas em nossa pesquisa colaborativa no Reino Unido e no Brasil. Oferecemos propostas relevantes sobre o valor da história, narrativa e memórias como componentes emergentes da resiliência para além de contêineres políticos coletivos, comunitários ou nacionais. Argumentamos que um elo perdido na literatura é aquele entre narrativas, memória social e resiliência ambiental como uma água cultural compartilhada de maneira pessoal. Essas idéias têm o potencial de abordar as lacunas de participação e governança através do recurso a um entendimento transcultural da comunicação em rede social sobre gerenciamento de água.

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The design of social learning interventions for adaptation has been widely assessed in the literature on water governance (Blackmore, Ison & Jiggins, 2007; Pahl-Wostl, Mostert & Tàbara, 2008; Bommel et al., 2009; Wallis, Ison & Samson, 2013). These can be seen as strategies capable of bringing to the fore crucial knowledge for facilitating collaborative planning and shared decision-making in democratic spheres such as river basin committees in Brazil (Blackmore, 2010; Crona & Parker, 2012) or 'lost' knowledge of flood community and stakeholder groups in the UK (Haughton et al 2015). The challenges facing both committees and community-based solutions need to be addressed in ways requiring better understanding and shared perspectives across national boundaries. Moreover, an interdisciplinary and potentially communicational and trans-cultural perspective combining a socio-ecological systems approach (Fishera, Turnera & Morlingb, 2009; Vignola, McDaniels & Scholz, 2013) as well as a cultural and narrative approach (Hampton, 2009; DeSilvey, 2011; Susskind, 2013; Hulst & Yanow, 2016), offers a multi-directional framework. In fact, a cultural policy of water management is just as vital to address as an environmental policy, as Bell and Oakley's point out:

The argument would be to see "economic" resources from water to housing to green spaces in cultural terms, to help understand what they mean to people and hence how they can be valued in terms other than the economic – or through a radical rewriting of the definition of the economic (2015, 157-158).

If engagement on the grounds of cultural participation is to be afforded, then the concept of participation itself needs to be stretched to include more than politics. In Brazil, it is mandatory for decision-making bodies to include society's active participation, a democratic principle that speaks to a concept of 'hydro-citizenship' that is currently being explored in the UK, wherein a top-down water governance is giving way to community-led adaptation planning as the state retreats.³ However, such committees or grassroots initiatives may struggle to comply, particularly in Brazil, as the seats at the table reserved for civil society may either not been filled or may be occupied by societal actors struggling

³ The authors have discussed 'hydrocitizenship' in great detail with the research lead Owain Jones of the UK's Arts and Humanities Research Council funded The Hydrocitizenship Project, which addresses participation in water and its management from the perspective of performance, poetry, literature and creative communities in the UK (see <http://www.hydrocitizenship.com/>), and also in projects funded by Fapesp (Sao Paulo Research Foundation). We thank Fapesp (Sao Paulo Research Foundation) for the funding provided (grants 2015/50070-0 and 2018/02270-9).

to achieve trust and legitimacy (Abers & Keck, 2013; Barbosa, Mushtaq & Alama, 2017). A similar engagement deficit has been found in the United Kingdom, where recent research has attempted to explore new and different perspectives, such as 'sustainable flood memory' on risk and resilience as catalysts for preparedness and adaptation at community and stakeholder scales (see McEwen, et al 2016; Garde-Hansen, et al 2016, 2015). Here, communities' lay knowledge is daylighted in the hopes that their voices will be heard among the command-and-control discourses of how to manage water, which is differentially in the hands of public and private ownership.

The opportunities for social and cultural learning through memory and communication have been scoped and explored in our UK and Brazil collaborative research, and our co-produced workshops and seminars in Sao Paulo State and England have convinced us of the cultural, environmental and political value of trans-culturally exchanging narratives and memories for water resilience for researchers, water stakeholders and water agencies. We have conjoined perspectives on hydro-citizenship as a digitally-enabled and communication-led practice across water governance scales with the UK Environment Agency's Research Scientist and Strategic Catchment Partnerships Manager and with Sabesp (São Paulo water and waste management company) in Brazil. In what follows we offer relevant insights from our initial discussions with water stakeholders at the research, policy and management levels in which we have explored with them the value of story, narrative, memories and trans-cultural citizenship as key components for thinking about resilience. These insights have the potential to address participation and governance gaps through recourse to a cross-cultural understanding of socially networked communication about water management.

We argue that a missing link in the literature on water governance is the one between narratives, social memory and environmental resilience, and that arts, humanities and communication research (alongside a trans-national approach to water) have a stronger part to play alongside the social and environmental sciences. If good water governance is expected to reduce the deficit of engagement, it should include among its objectives the recognition, through strategies of activation, circulation and storage, of social memories. It should acknowledge the powerful role being played by media representation and production strategies (mainstream representations of water management as well as community-level communication of water stories), that convey attitudes of both social

apathy and critical engagement with water governance, suggesting that media and culture plays a crucial role in the production of hydro-citizenship. Such strategies have been developed in the UK and may encourage social learning from the past, with results that matter particularly to the Brazilian case, and may shape research in the future. We revisit the main theoretical and empirical foundations of this perspective and indicate how it can daylight key media and communication strategies capable of dealing with the challenges facing water governance in political contexts where social participation still must be widened.

First, we address water governance in Brazil and the UK. Second, we discuss connections between water risk, resilience and responsibility. Third, the literature on social learning interventions for adaptation and engagement is examined. Fourth, we explore opportunities for social and cultural learning through memory and communication in Brazil and the UK. This is followed by a set of recommendations about future research towards a concept of cross-cultural and transnational (digitally enabled) hydro-citizenship, with some contingent conclusions.

Water governance in Brazil and the UK within global contexts

The literature on water governance and environmental sustainability has often shown data from empirical research about the performance of political institutions that seek, in many places around the globe, solutions to the challenge of achieving better policymaking (Vignola, Mcdaniels & Scholz, 2013; Michels, 2011; Fishera, Turnera & Morlingb, 2009; Hampton, 2009; Irvin & Stansbury, 2004). This literature suggests that power-sharing institutions should rely on the participation of various kinds of expertise from the different social sectors in order to arrive at legitimate ways of resolving conflicts (see Whatmore, 2009). Legitimacy, in this context, can be built when social actors agree that although they may bring particular contributions to the deliberation, they all must compromise on the goal of reaching a more equitable distribution of social welfare and the fulfilment of environmental rights in the realm of a new form of citizenship (Dobson; 2000, 2007; Barry, 2005).

The novelty about citizenship here has arisen from the theoretical debate on obligations and responsibilities associated to social rights, which gradually incorporated ecological boundaries into the balance between passive and active citizenship, indicates

- 266 -

Dobson (2000). The welfare state tended to be erected on the recognition of the individual as the holder of rights, which makes passive citizenship as prominent in the context: the citizen is the recipient of civil, political and social rights, according to the evolution of the levels of consolidation of social welfare. However, ecological citizenship requires an active dimension of engagement in the open defence and negotiation of the rights of nonhuman elements and the human beings yet to be born. Here, story, narrative and memory have a powerful part to play because this is not simply about a politics of recognition and identity as a citizen but a politics of administration and managing the resources upon which that identity is constructed. These resources are not only physical, material and economic but also social, personal and affective, with inherited histories and heritages from others times and places. To manage water effectively one also has to manage how people feel, think and tell/receive stories about water.

New here is the definition of citizenship rights as a political construct to be developed beyond national boundaries and political economy definitions into affording a cultural policy of water management that acknowledge the different temporalities at work in story-ing water (historical, geological, hydrological, spiritual and political). Ecological citizenship should be transnational *per se*, but also multi-directional, while its exercise needs to be sought on both a global and personal (human and non-human) scales. We then suggest that the use of the expression hydro-citizenship is pertinent as it emphasises an understanding of a different form of ecological citizenship, and that telling, sharing and circulating stories of hydro-citizenship across national containers can be an effective way of exploring water governance issues in a connected way.

Water governance within the framework of ecological citizenship places the requirement for the construction and operation of mechanisms on shared management structures. In the operation of such instances, it is assumed and accepted that techno-scientific knowledge must inform the debate in democratic arenas, but without necessarily having absolute rights or privileges. The various forms of expertise will be mobilised to take on complementary roles in democratically conducted processes in order to achieve better results in a decision-making sphere, highlighting the richness of voices, perspectives and knowledge, which will nevertheless depend on effective communication channels to gain projection and circulate with open and easy access (Collins & Evans, 2007; Brossard & Lewenstein, 2009).

Understanding the dilemmas underlying participatory policy-making is particularly important when there are laws and official guidelines regulating mandatory procedures within formal water governance structures. This is the case both in the United Kingdom, which established a system of public consultations for designing management plans (United Kingdom, 2015), as in Brazil, with its format of river basin management committees (Brazil, 1997). The consensus is that participation of stakeholders at all levels will be key to possible successes. On the other hand, there is a need to recognise the polysemy and multi-directionality surrounding the normative concept of public participation in policymaking: it can range from a more “passive” form in which stakeholders are mere recipients of information about previously-taken decisions by government representatives, to a more “self-mobilizing” form, in which members of the public are the protagonists of change (Few, Brown, Tompkins, 2007). It can also be creative, activist, grassroots and protest-driven in direct opposition to technocratic well-meaning bureaucracies as well as private, corporate or seemingly corrupt water management practices.

In this political landscape, the meaning of governance emphasizes transparency, accountability and participation as the main tenets of the strategies conceived to increase efficiency in public management, along with community empowerment and administrative decentralization, combined in innovative forms of water management (United Nations, 2006), such as the Brazilian water committees. The framework for the creation of river basin committees in Brazil is the federal law 9.433/1997 – Water Resources National Policy (Brasil, 1997). Its Article 39 establishes that committees must be composed of representatives of the Union, States, municipalities, water users in their area of activity and NGOs with interest in water resources, being the “representation of the executive powers of the Union, States, Federal District and Municipalities limited to the half of the total members”. State legislations further specify the proportion of each sector, usually in order to preserve parity. The duties of the committees include “arbitrating, in the first administrative instance, conflicts related to water resources”, “approving the Water Resources Plan of the basin”, “establishing mechanisms for charging for the use of water resources and suggesting the amounts to be collected” and “establishing criteria and promoting the cost sharing of infrastructure of multiple use, of common or collective interest” (Brazil, 1997).

Studies suggest that there is potential for these committees to democratise and improve policymaking. “Their logic allows the actors involved to act, from the beginning,

having parameters to their roles, responsibilities and attributions in order to neutralise predatory practices guided by economic or political interest”, emphasizes Jacobi (2003, p. 328). As it happens within any democratic arena, different kinds of expertise are confronted with the challenge of striking a balance between opposing understandings. “The intervention of factors not only technical, but also of political, economic and cultural character make the process much more complex”, according to Jacobi (2003, p. 329), and we would add, these understandings often consist of narratives and memories of managing water that are inherited, recorded or projected. That is why the public sphere of communicative action, debate and deliberation made possible by the water committees has been seen in the literature as a promising innovation to democracy, as they can process and facilitate negotiation and conciliation between conflicting demands by widening the scope of who can speak and vote, based on various strands of expertise, all seeking validation in an open arena (Habermas, 1984; Abers & Keck, 2013).

Water risk, resilience and responsibility in Brazil and the UK

Expectations on the public sphere of communicative action built by the Brazilian committees also include growing the capacity of building resilience against climate change and water risk. As a malleable concept, resilience in the realm of participatory institutions should be distinguished from the usual meanings in the natural sciences, where resilience is understood as the capacity of a system to return to a previous state of equilibrium. The meaning usually attached by natural scientists to resilience calls upon “appropriate levels of resources and capacities to mitigate, prepare for, respond to and recover from a range of shocks and stresses” and the goal of preserving “system stability – to bounce back – after a perturbation and focus upon short-term and reactive measures predominantly concerning endogenous risk” (Coaffee & Lee, 2016, p. 3).

However, “such resilience approaches do not transfer well from natural to social systems analysis” (Coaffee & Lee, 2016, p. 41). The critique from social scientists of resilience as a return to a state of equilibrium brings with it the need of problematising the very parameters responsible for determining such equilibrium as a desirable state. And, once the starting point where the system should supposedly return to is questioned, the mere return to it may not be wanted anymore. Expectations of reaching a new configuration begin to be discussed as possibilities to improve an initial state. Moreover, in narrative approaches from

the arts, humanities and communication sciences, the very notion of equilibrium, disruption and return is in fact tempered by the denouement which is recognised as a new equilibrium and not a straight 'business as usual' reinstatement of things as they were.

"Evolutionary approaches – often portrayed as the binary opposite for equilibrium approaches – focus upon adaptability and flexibility with the function of restoration to a new normality and an increasingly complex and volatile world", according to Coaffee & Lee (2016, p. 41), who cite Davoudi (2012, p. 304) to expand this perspective: "evolutionary resilience promotes the understanding of places not as units of analysis or neutral containers, but as complex, interconnected socio-spatial systems with extensive and unpredictable feedback processes which operate at multiple scales and timeframes".

Although equilibrium approaches remain predominant even in social and human sciences, according to Coaffee & Lee, "we would see an ongoing paradigm shift occurring from equilibrium to evolutionary approaches", under a sort of transition where resilience will be "as much about a set of transformative learning processes as it is about outputs and outcomes" (2016, p. 42). This has been the case in the UK's *Sustainable Flood Memories* research project, wherein one of the authors found that a privately-owned UK water company was able to draw on the experience of their longest serving workers to understand and communicate to the public the history and knowledge of water supplies in the region, especially during the disruptive chaos of the 2007 Floods. In some cases, such organisations rely on the community to remember environmental risk, as they may have remained forsaken by public policies, thus becoming adaptive and resilient under their own steam. In other cases, the community is wholly dependent on the agencies (environmental, emergency, health and local government) to sort out the risks and establish a management system. Evolutionary approaches do then need to be mindful of the relationship between structure and agency in each context. Whether a community is highly adapted and can draw on a rich history of resilience measures or whether a community seems wholly dependent on top-down protection, a *lessons-learned* approach, after an extreme weather event, is all about remembering and narrating that community's relationship to water properly, using the right tools for sharing knowledge. Therefore, in order to engage with this kind of 'geography of memory' (see Jones and Garde-Hansen 2012), a narrative and memory approach may be required that mediates and makes accessible and shareable the experiences of environmental risk, to allow communities the resources to adapt and evolve.

In the case of the Brazilian river basin committees, research indicates that they have been successful in creating opportunities for strengthening governance by symbiotically bringing together to the public sphere of communicative action the different voices relevant to the analysis of solutions to complex problems and allowing for a productive relationship between social sectors, capable of equating fair and effective solutions (Abers & Keck, 2013). In this aspect, Brazilian experiences can be distinguished as effective democratic innovations, when compared with similar achievements around the world struggling to increase participation (Barbosa, Mushtaq & Alama, 2017; Susskind, 2013; Gooch & Stålnacke, 2010). Their novelty lies partly on conceding equal share in decision-making to the various participants, reproducing in a micro-sphere the democratic rationale of one person-one vote and allowing time and fixed procedures for communicative action and debates regularly taking place with open, previously publicised agendas.

Furthermore, the Brazilian committees can be taken as instances that welcome and impel social movements in several areas, in particular, environmental ones, conceding effective representation to perspectives originated in networks of collective action which struggle for spaces of manifestation, circulation and effective symbolic and communicative influence (Abers & Bülow, 2011). These committees could even be transferred to the UK context if there was a sufficiency of will to provide a space for multiple stakeholders and heterogeneous voices in water management to be expressed. Certainly, the most recent research emerging from the UK 'Hydrocitizenship' project suggests such a space of narrative exchange (which ought to be 'catchment' or basin-led) is very much needed (see Jones and Jones 2017). In this context, as Abers and Bülow (2011) point out, it is important to recognise that social activism may not necessarily manifest itself against or in isolation from the state, but rather crosses the boundaries between state and society, crosses boundaries between regions, neighbourhoods, public and private, and emerges in actual terms of formal representation within institutional structures, as well as informal networks of multi-directional stakeholders in water. Accounting for these differences of scale and representation should in turn confer balanced weights to the various actors in the public sphere, whether they come from different levels of power (municipal, state, federal, local or professional), market (business, consumers and industry) or society (community or individual).

Social learning interventions for adaptation and engagement

Social learning has often been seen as a relevant outcome of water governance, as it can improve decision-making. The literature on how water governance institutions have been pivotal to the development of opportunities for social learning through the creation of spaces of communicative action in many parts of the world, is mounting (Pahl-Wostl, Mostert & Tàbara, 2008; Bommel et al., 2009; Wallis, Ison & Samson, 2013). Therefore, it is the approach on how governance itself can benefit from better decisions which are taken when communities start engaging regularly with public management institutions, in meetings properly conducted, and all participants tend to acknowledge that they are learning from those interactions (Blackmore, 2010; Heijden, 2014).

In common, nearly all these approaches are based on the shift from the *government* paradigm to the *governance* paradigm. In the *government* paradigm, the various social actors undergo the effects of decision makers who think for them, based primarily on technical, esoteric solutions. In the *governance* paradigm, actors interact with one another, in a context where the kind of knowledge which is held by the sectors directly experiencing the problems in question, known as *lay expertise*, becomes fundamental for improving decision making. “The notion of government as the single decision-making authority exerting sovereign control over its citizens has been replaced by multi-scale, polycentric governance approaches that recognize the contribution of a large number of stakeholders”, point out Pahl-Wostl, Mostert & Tàbara (2008, p. 1). This shift has been strengthened by the ‘narrative turn’ in the social sciences more generally and which, as Jones and Jones state, requires us to tell more ‘ecological stories’ of water (2017, pp. 148, 158).

The specific arrangement of forces underlying environmental governance (either in Brazil or the UK) recognises that the knowledge about the natural world needs to be scrutinised when it guides decision-making processes, submitted as these are to factors of various orders. “The problem that we face when we deal with sustainability lies not so much in our lack of understanding of the functioning of ecological systems”, argue Pahl-Wostl, Mostert & Tàbara (2008, p. 24), “but in our lack of understanding of the governance and cultural systems and how they are structured and managed and interact with ecological systems, and how we produce science and knowledge for policy”. Furthermore, attention to the cultural and social leads us to realise the disconnection between how people try to lead their lives ecologically within and between national containers and how they

experience their life as an expression of lifestyle, everyday living, and what Jones and Jones call the 'liberal capitalist-consumption-based model of self-becoming' (2017, p. 158). While water consumption appears to be as one more right to be respected in a global scenario of the search for individual freedoms, stories of water scarcity that become increasingly available through communication networks reveal how more and more people tend to co-produce and share a culture of denial of environmental rights.

Culture (as a canon of stories in need of new ecological stories, and stories of water) may influence how people perceive the contradictions, ambiguities and controversies of certain political decisions and of the very process of policy-making that has been analysed in the literature in terms of frames and narratives (Benford & Snow, 2000; Hampton, 2009; Hulst; Yanow, 2016). In this sense, the recognition that culture influences decision-making processes still boosts political institutions, when these search for governance formats that allow the various social sectors to explore, confront and question the frames in dispute in the democratic arena, in regulated interactions. This regulation aims at balancing disputes and seeks to ensure equality and fairness between different sources of discursive power, according to the normativity of the Habermasian public sphere (Habermas, 1992; 1996), but it is also iterative as actors seek to story their perspectives into actionable knowledge.

Furthermore, widening political participation has been considered necessary by environmental governance institutions not only to enable the exchange of ideas and the thorough examination of possible scenarios based on changing sets of priorities, but also as a means of social learning, and action in a time of water crisis (river pollution, flood, drought, storm for example). This kind of learning is then supposed to occur when the circulation of knowledges and the opportunity to listen to other's perspectives trigger collective and community reflections that favour the acquisition of novel knowledge, capable of responding with more precision and accuracy to the complex challenges of managing public policies in a risk society (Beck, 1992; Giddens, 1991). Moreover, stories of water, and water crises, can bring communities into being.

However, the conditions for social and cultural learning through memory and communication do not only arise spontaneously (as in grassroots social movements), but also come from institutional arrangements capable of stimulating their development and permanence, besides effectively benefiting from it, in the view of the majority of participants. Often, as is the case within the public spheres of communicative action in the

Brazilian water governance committees, achieving a positive assessment by the majority of participants about the quality of a decision-making process itself requires overcoming the difficulties related to the challenge of reaching fair agreements. Fairness, under the literature on policy assessment and democratic innovations, is achieved by agreements that both preserve the autonomy of the different social actors involved and benefit from the diversity that arises when the dilemmas are collectively debated and the solution found is assessed as being the best possible by most actors, or at least considered better than the one that could be reached by a single actor alone (Michels, 2011).

Expectations on the potential of social learning for improving water governance are not new and were already proposed by the European Water Framework Directive (WFD), which came into force in 2000, as Pahl-Wostl, Mostert & Tàbara (2008) remind us, which in turn is grounded on conceptions that were present in previous, fleeting configurations (Bommel et al., 2009; Wallis, Ison & Samson, 2013). But the scale of the effects of that new understanding on environmental governance has come to be perceived, after 20 years of the WFD implementation, on a global scale, so that the process should be ready for a reassessment of priorities, in light of the overall results achieved. In addition, social learning for water governance should not be dissociated from the broader context brought by the framework of the Integrated Water Resources Management concept, consolidated by the International Conference on Water and the Environment in 1992, as emphasized by Sousa Júnior et al. (2016). Such a concept, although subjected to criticism because of its excessive breadth and lack of precision, according to Biswas (2004), signalled the growing concern about the need to develop methodologies for participatory policymaking for the water management sector.

Significant parts of the literature consider the existence of specific situations as necessary conditions for social learning through memory and communication, such as an open dispute between conflicting interests; arenas of debate with real openness to listening to the others' perspectives; channels of dialogue appropriate to the manifestation of dissent towards deliberations; and final conciliations that are minimally satisfactory to the maximum possible number of participants (Blackmore, Ison & Jiggins, 2007; Bommel et al., 2009; Crona & Parker, 2012). Above all, a decisive condition is the formal requirement of obtaining, at the end of the deliberation process, concerted action towards the resolution of the initial problems that motivate the very start of deliberations. A concerted action posits

rights and duties for every social sector represented in the arena, from which certain tasks are expected in a previously arranged timeline, in a way that all must perform as collectively agreed if the outcome is expected to be achieved.

These are some of the conditions that have been taken into account by empirical research to investigate if there was or not social learning in public spheres studied in various parts of the globe. In general, research seeks to know the participants' perception of whether there was equality and fairness in the deliberations and whether the various political positions were respected and duly assimilated by the final decisions. It has been also evaluated if the final decisions included schedules for concerted actions capable of matching the problems detected, with adequate coping strategies to be implemented at the right time.

Another way of assessing the challenges faced by deliberative arenas of water governance which depend on the success of communicative action is brought by the analysis of social learning as a system (Blackmore, 2007). This approach develops in the wake of theories that have contributed to the advancement of the perspective of considering social learning not so much as an outcome of water governance, but rather as a tool to improve governance itself (Finger & Verlaan, 1995; Daniels & Walker, 1996). Developing a systemic view requires discerning the factors that tend to favour the construction of cooperative relationships, with respect and trust, and of participatory, interactive learning processes for the elaboration of common interpretations that point, with relative consensual support, to concerted actions to be taken.

Certainly, as Blackmore (2007) indicates, what comes to be regarded as evidence of social learning varies according to the theorizing itself about what is learning. But in some ways there is relative convergence around the consideration that evidence of learning may be not so much what we end up owning in our mind, but rather how we relate to others and to the physical and symbolic world. In this sense, the configuration that governance institutions come to assume, being more or less successful in encouraging behaviour changes that help deliberation, is a factor that can be evaluated as heavily influencing the creation of opportunities for social learning through memory and communication.

Opportunities for social and cultural learning in Brazil and the UK

Analyses of the extent to which Brazilian committees may bring advances in integrated management and enable social learning often point to the creative political arrangement they count on to deal with the usual challenges in participatory, deliberative arenas in water governance, such as the predominance of socio-technical knowledge, already mentioned above, and the unequal distribution of power among the various actors, with the prevalence of political and economic interests over ordinary water users' interests. Research suggest that they not always succeed, but some scholars admit that it is not possible to draw generalisations, and more investigations are needed (Sousa Júnior et al., 2016).

In fact, when compared with other countries also pursuing participatory and decentralized water management public spheres, such as Australia, Brazil stands out because of its federal and state legislation, points out Sousa Júnior et al. (2016). Most Brazilian states passed legislation determining that the process has to start again on a fresh basis every two years, with new elected members trying to achieve a democratic balance between conflicting interests. Such democratic governance processes have been shown to strengthen adaptation capacity by increasing information flow, improving awareness and promoting the mobilisation and activism of water management interested groups (Ballester & Lacroix, 2016; Engle & Lemos, 2010). In the UK, voices suggesting a similar direction of travel are slow to take hold even as visions of a flooded future in the flood-rich context of the early 2000s suggest that a more dynamic and less hard-engineered solution to water management is required:

Perhaps we need to do more to curb our compulsive, single-minded efforts to control water through elaborate structural interventions, move away from bricks and mortar-based solutions. The challenges we face now and in the coming years may drive us back towards embracing the previously dynamic relations between land, water and communities (Building Futures 2007, p. 5).

Within the Brazilian river basin committees or UK catchments, reaching a balance between a diversity of perspectives and stances in the decision-making processes requires the development of inclusive management capabilities. These capabilities tend to evolve from productive relationships, which are the foregrounding of a concept of 'hydro-citizenship' within the basin/catchment, which in turn can be formed and boosted when committees/groups provide opportunities for sharing personal and institutional views.

Such management capacities include the expression of a non-definitive, transient leadership which is then considered as circumstantially deserving legitimacy, attributed by the majority to the solution of a particular problem. This is not at all the same as retreat of the State, or the creation of civic responsibility without the framework and support of good governance. Nor is it diversity without a balancing discourse of inclusion. While water experts 'involved in emergency response should not ignore the skills, energy and ingenuity that are latent in most communities; in preparing for an emergency, communities have important shared local knowledge and can harness local resources and expertise' (UK Cabinet Office, 2008, p. 350). In Brazil, such management capacities were named "practical authority" by Abers & Keck (2013, p. 1-2), "the kind of power actors have when they build the capabilities and recognition that enable them to influence the behavior of other actors". In the UK, these capacities may still be being ignored and there is much to learn from Brazil's inclusive communicative paradigm.

A number of case studies carried out by Abers & Keck (2013) indicate that the practical authority was instrumental in ensuring that many Brazilian river basin committees were not paralysed by the difficulty of moving forward in the decision-making process vis-à-vis the diversity of perspectives at stake in a landscape of political institutions to be built. In the course of establishing the committees in the 1990s and 2000s, under state and federal legislation just created, it was necessary to find intersections between the various participants so that the deliberations had a quorum and the votes were grouped around preferences leading to viable majorities.

The construction of the practical authority through communicative action in Habermasian public spheres became essential for the very viability of the newly created institutional arrangement. After about two decades, the institutionalization of committees is a fact, and its number exceeds two hundred. Nevertheless, recent research suggest that part of their challenges remains, to a great extent, the same (Empinotti et al., 2014; Stefano et al., 2016): the seats reserved for civic organizations have not been always filled, which makes questionable by courts any decision taken without comprehensive representation; besides, there is often a great distrust on leadership, a problem which becomes more serious when representatives do not recognise the committees' directing boards as legitimate to coordinate decision-making processes. The shortage of practical authorities can trigger situations in which extended deadlines for deliberation are required. Although complex

decisions need, understandably, more time to be democratically processed, often there are delays not necessarily favouring management efficiency. Moreover, public managers often depend on the committees to advance important environmental policies, and so the potential of the committees to paralyse a complex chain of environmental governance cannot be ignored.

We argue that among the strategies that committees can explore in an attempt to overcome legitimacy deficits, is the development of conditions in which deliberations become opportunities for social learning, both as an outcome of water governance and a force to improve governance itself. How can the “practical authority” be nurtured towards the strengthening of the water committees as effective democratic innovations? Much of the political science literature cited above, including Abers & Keck (2013), focuses on the need of institutional and structural solutions, such as more integrated regional planning, synergistic organizational layering, partnerships between state government and municipalities, and so on. Yet, an equivalent focus on narratives and memories of water demands attention to cultural agents and the mediated agency that lies around, within and between the practical authority, such that ‘cultural authority’ needs to also be nurtured. Thus, a path that has received comparatively less attention is how social learning can be fostered by the activation, expression and circulation of narratives, stories and memories about previous experiences of community engagement with water governance and its impacts on daily life, such as droughts, water shortages and floods. The construction of the deliberative process can be conducted in a way that encourages attitudes of cooperation and sharing of narratives, stories and memories, with the common expectation that such interaction can improve decision making. Then participatory instances might be seen as productive spaces, where engagement is worthwhile.

An area to be explored further is the symbolic content that circulates in the periodic meetings held by the Brazil river basin committees with a deliberative function and in the many catchment level meetings of the wide variety of water stakeholders who work across public and private scales in the UK. While Brazil may have articulated the multi-scalarity of managing water effectively in its committee structure this does not always mean that the widest variety of stories are in circulation. The manifestations of the different sectors in search of clarification of their own perspectives and persuasion of the other sectors often include narratives about water management policies, narratives which are based on

collective memories of those sectors. In our own experience of attending committee meetings in the State of São Paulo, we have identified rich perspectives on crucial problems of water governance but they were expressed with varying results. Sometimes they were important in steering the decision-making process. At other times, they were not properly considered in the debate. Even so, its function remains as policy frames and narratives immersed in culture and discourse, a matter open to further research. A research programme that places water culture as the central parameter and circuit for the formation of policy narratives should not neglect such sources.

Although meeting logs and transcripts, and interviews with committee members could be the most available channels for accessing such content, scholars committed with the understanding and full characterization of the meanings underlying policy narratives and frames should carry out a deeper investigation on cultural values, personal backgrounds and the expectations of representatives, communities and social sectors.

Towards a concept of cross-cultural and trans-national hydro-citizenship

A concept of (and the follow-on development of a framework for) cross-cultural and trans-national hydro-citizenship needs to be established with regards to the cultural and increasing trans-cultural aspects underlying attitudes and behaviours involved in the global and democratic public engagement in water governance spheres. To participate, cooperate and be dedicated to the shared construction of a common water-secure future depends on latent cultural and trans-cultural dispositions that are explorable as individual, collective and communicative memories to be shared digitally and mediated through images, videos and shared acts of storytelling. Such a shared construction of digital hydro-citizenship can benefit from the circulation and sharing of diverse views on historical experiences about mechanisms of social, economic and political inclusion in democratic and increasingly connected societies. Starting from an individual level, the sense of belonging to a community of people with equal water rights may prove to be one of the most complex objects of study in sociology, communication and memory studies.

In the context of memory studies (connected to the human and social sciences research on adaptation to the effects of climate change), the recovery, activation and circulation of memories of experiences of rupture (such as droughts, floods and other potential climate change effects) have the potential to develop resilience and scenario future

- 279 -

memories of water management in which adaptation to water scarcity is modelled by communities as much as scientists. Sustaining water memory provides support and brings resources to social learning for adaptation and addresses strategic forgetting for decision-makers (see Worcman & Garde-Hansen, 2016; Garde-Hansen, McEwen, Holmes & Jones, 2016; Garde-Hansen, McEwen & Jones, 2015; Ensor & Harvey, 2015; Nykvist & Heland, 2014). Thus, remembering water in decision-making processes provides the groundswell of opportunity for creating a repository that a community can draw upon to learn from past experiences in coping with climate change effects, and to facilitate planning for the future.

The tasks of applied research across the humanities and sciences consist of employing techniques that include interviewing, self-interviewing and oral history recording, both of people who have experienced traumatic events and community/business leaders and public managers. These are techniques that seek to daylight the crucial aspects of pertinent experiences, identified in the form of personal-professional-stakeholder narratives, tracing interpretive routes that contrast the individual, collective, communicative and digitally connective dimensions of memory to accentuate the ways in which individuals deal with stressful situations in their daily relationship with water and the broader environmental setting on which it depends (Keightley, Pickering 2012; Assmann, 2010; Misztal, 2003; Kansteiner, 2002; Halbwachs, 1980).

To conclude, it is useful to underline that adaptive strategies for environmental management are associated to sources of resilience to the management of social-ecological systems. As a useful construct to understand how meaning and environment can be intertwined in memory formation, those systems can be understood as ways of creating capacity to “cope with, adapt to, and shape the system under uncertainty and surprise” (Nykvist & Heland, 2014, p. 1). Such capacity grows and accumulates over time towards memory-based social learning and resilience, as connections between individual and collective memories are built, and participatory management bodies learn how to benefit from those communicative interactions. Hence the need of more research on the missing link between communication, narratives, social memory and environmental resilience, aiming to widen society’s active participation and community-led adaptation planning in a way that hydro-citizenship may flourish.

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