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Abstract

In light of the contributions to this special issue I propose four directions for future research in freshwater geographies: place, matter, practice and hope. First, in spanning the social and physical sciences, the discipline of geography can shed light on water as part of biophysical, socio-cultural, political place. Second, notwithstanding the importance of place, the materiality of water matters. Third, practice encompasses two distinct fields: cultural practices of interaction with water places and practices of governing. Finally, in the face of abuse of freshwater and of peoples' relationships with water places, geography can work towards imagining and enacting hopeful futures.

Keywords

practice, matter, hope, place, geographies, freshwater

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Freshwater geographies? Place, matter, practice, hope

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Abstract

In light of the contributions to this special issue I propose four directions for future research in freshwater geographies: place, matter, practice and hope. First, in spanning the social and physical sciences, the discipline of geography can shed light on water as part of biophysical, socio-cultural, political place. Second, notwithstanding the importance of place, the materiality of water matters. Third, practice encompasses two distinct fields: cultural practices of interaction with water places and practices of governing. Finally, in the face of abuse of freshwater and of peoples' relationships with water places, geography can work towards imagining and enacting hopeful futures.

Key words: geographies of hope, materiality, place, practice, water.

On my last visit to the Shoalhaven River I walked down the long slope and peered over the bank. A dozen or so neat wire cages stood carefully protecting seedlings. Mangrove seedlings. This spot marks the river's tidal limit. The water is generally brackish. During a big flow, following heavy rains in the headwaters, fresh water passes this point. In a dry spell – like we've seen in recent months – as the tide turns the salinity increases. Perfect spot for mangroves.

Mangroves thrive in environments where the water changes. Tides go out and come in; salinity levels fall and rise. They cope well with high seas, big floods and giant storms; water from the ocean, the inland and the sky. Looking down on these small plants now I see how clearly they illustrate that water places are never static. Physical processes

change, material characteristics shift. And with that, the ways in which humans interact with water. Meanings, values, practices and priorities vary across space and time.

There is no doubt that freshwater demands significant practical and political action. Over-extraction, pollution and dispossession affect daily lives and the health and functioning of environments. But if we want to understand 'how freshwater is *done*' as Tadaki and Fuller (*this volume*) suggest, then the discipline of geography has much to offer. Notably, 'the discipline of geography' spans the social and physical sciences, and freshwater provides an opportunity to bring these fields into closer conversation. The mangroves point to four ideas that warrant further attention in freshwater geographies: place, matter, practice and hope. These four concepts emerge from the special issue – either from their presence in or absences from the contributions – and they form the structure of my commentary.

Place

Reading the papers in this special issue it struck me that the work is not simply about 'freshwater geographies', but about freshwater *places*. The papers are less about water as 'stuff' than about water as part of biophysical, socio-cultural, political place; rivers and lakes especially. In particular, they are about the specificity of place. As Fonstad (2013) has argued, 'individual places and contexts' have historical and ongoing importance for 'understanding broader water issues'. What is distinct about this collection of papers is its emphasis on the significance of place in freshwater geographies.

Water is the subject of diverse geographical scholarship. Key contributions have been made in the past decade concerning water and social power (Swyngedouw 2004), the role of water in urbanization and modernity (Kaika 2005), critiques of privatization (Bakker 2003), rights to water (Sultana and Loftus 2012), implications of the abstraction of water, both metaphorically and physically (Linton 2010), and the need to better understand connections between human, hydrological and ecological systems (Fonstad 2013). A significant body of research focuses on the role of water in the home and in everyday life (Browne et al. 2013, Head and Muir 2007, Sofoulis 2005). This is vital work: water fulfils myriad functions; rights and access are relevant to politics and practice. Yet notably, there is a strong focus in this work on disembodied, abstract and abstracted water; water as substance, as resource, as separable.

This is quite different to the idea of water in place. Water is far more than H₂O; it is an intrinsic part of place. A study of water in place, or *water places* (Gibbs 2009a), raises quite different conceptual and methodological questions to water as abstract and abstracted matter. Tadaki et al. (*this volume*) argue that 'monitoring should be aimed at understanding rivers *in place*', and that efforts to standardize monitoring lose sight of

the specificity of place. They offer a critique that “stems from a concern about the reductionist, abstract mindset of quantification-for-comparison rather than a mindset that is concerned with resourcing and enabling meaningful biophysical understandings of (specific, local) river systems.” The same critique might be made of other interactions with freshwater places. Freshwater places are distinct, not abstract; not transferable. They take us immediately beyond water as a resource.

There is space in geographical scholarship for further work that prioritises understandings of water as inherently connected to place, and in particular to specific places. To rivers and lakes, to ponds and springs, to irrigation ditches, wells and taps (see Hillman 2006, Lavau 2013, Slater 2013). Understanding water places has implications for management of water resources, and planning up and down a catchment. And there are direct and indirect connections between water, place and a suite of social concerns including health and wellbeing, identity and social justice (Hillman 2006).

Thinking through water places means paying attention to specific circumstances. Specific biophysical assemblages, socio-cultural communities, relationships and affects. Freshwater geography provides a context for further research projects that draw on the strengths of the social and physical sciences in order to grapple with water places (see Lane et al. 2011, Wilcock et al. 2013). This volume contributes to such an effort.

Matter

Notwithstanding the importance of place, the matter of water matters. The material qualities and characteristics of water (and its assemblages) are significant to human interactions with and governance of water, and to the functioning of environments. While this special issue provides a clear focus on the importance of place specificity, it has perhaps missed a trick in paying little heed to the significance of materiality and agency.

Questions of matter and agency have featured prominently in human geography’s material turn. Bakker and Bridge (2006) argued for greater attention to materiality in environmental and resource geographies. Through these movements, the materiality of water has begun to gain attention (see Bear and Bull 2011, Gibbs 2013, Lavau 2013, Walker et al. 2011). Material approaches to the study of water are providing important insights into how water is understood and governed in ways distinct from other resources and environmental elements. For example, Walker et al. (2011) explore the materiality of floodwater in Hull, UK, highlighting the changing effects of floodwater over time, from the initial dramatic flood event, through to encroachment of dampness into people’s homes. In her account of sustainable management on the Goulburn River, Australia, Lavau (2013) enlists the concept of flow to reveal the ambiguous and

simultaneous materialities of river water that operate in the form of 'irrigation water' and 'environmental water'. Themes of time and flow are central to the materiality of water.

Returning to the mangroves with which I opened this commentary, the themes of time and flow play out again. Water flowing past this point is sometimes fresh, sometimes brackish. Mangroves and their communities thrive in such a land/waterscape. People plant and tend new seedlings, hoping that they will take hold. Interactions with this place are shaped by the specific materiality of water, marked by flow and time.

The material turn is concerned with matter itself, but perhaps more with 'what matter does rather than what matter is' (Anderson and Tolia-Kelly 2004, p672); the cultural, social and political implications of the particular qualities of materials. The agency of matter. Human geographers and others are beginning to account for the agency of water and water assemblages, and investigate how water's agency affects meanings, decisions and practices (Bear and Bull 2011, Gibbs 2013, Slater 2013). Drawing on the work of Bennett (2010) and others, this work asks how would political responses to public problems change if we were to take seriously the materiality and agency of water. This question has implications, for example, for land and water management, where the two are frequently separated and managed by distinct institutions and bureaucratic processes. Work on materiality, assemblage and agency unsettles notion of water as separate, discrete matter that exists and behaves in a uniform or homogenous manner across time and space.

Geomorphologists and other freshwater physical scientists have long investigated the agency of water to shape and transform landscapes. Human geographers recognize that water and its assemblages shape and are shaped by experiences, meanings, values and practices. Freshwater geography provides opportunity to bring social and physical sciences into conversation in order to better understand water and water places, and to devise priorities and techniques for interacting with and governing them. Bringing together knowledge of physical characteristics and processes, and socio-cultural meaning and practice, has the potential to reveal new insights into how the materiality and agency of water influence social relations, power, politics and environmental decision-making.

Practice

Considering water in terms of place and matter demands attending not only to distinct biophysical qualities of rivers, lakes and other water places, but also to distinct practices. An abstract and abstracted notion of water loses sight of this specificity (see Linton [2010] for a detailed discussion of the implications of metaphorical and physical

abstraction). Practice is relevant to freshwater geographies in at least two distinct ways: cultural practices of interaction with water and water places; and practices of governing.

Cultural and historical geographies have much to offer here, through their focus on everyday and extraordinary practices. Attention to cultural practice allows us to develop nuanced understandings of place. It illuminates rhythms of everyday life, and helps identify patterns and diversity. Practices reflect and are reflected in meanings and values attributed to places by individuals and groups. The diversity of ideas, practices and values has implications for priorities and institutions of governing.

Again, there is a good deal of work on cultural practices associate with water as 'stuff' (Browne et al. 2013, Head and Muir 2007, Sofoulis 2005), but arguably less so on water places. This work is needed. Scholars working in the growing field of more-than-human geography are beginning to grapple with what it means to involve water as an active agent, or even participant, in research as well as in life (see for example <http://www.morethanhumanresearch.com>). This work opens new conceptual, methodological and political possibilities for bringing the physical and social sciences into productive conversation.

Practice is also vital to how we govern water. Governance is more than the formal structures and processes devised in order to make decisions and manage. Rather, it must also consider how institutions play out in practice. The papers here discuss several aspects of governance, including monitoring (Tadaki et al. *this volume*), conservation and legality (Hughey et al. *this volume*), and inclusion and exclusion (Nissen *this volume*). These questions are important. But it is not simply the structure of institutions that matters; the *practices* of governing are crucial. Nissen (*this volume*) makes some moves towards this kind of thinking, but studies of practice in governing could be further developed in the field of freshwater geographies. Marginalisation continues despite institutions that formally seek to address inclusion and exclusion. For example, Nissen (*this volume*) finds that women and 'less clearly articulated or developed perspectives' are excluded from environmental governance arrangements in Canterbury, New Zealand. Elsewhere, Jackson and Barber (2013), McLean (2012) and Weir (2009) find Indigenous peoples marginalized in governance practice, despite formal mechanisms of inclusion. This ongoing marginalisation is consistent with Hillman's (2006) insistence in situated understandings of procedural and relational justice in river management. The broader assertion here is that we consider formal procedures *and* relationships of power that emerge through or despite formal structures. Power dynamics exist; processes and institutions do not necessarily fall into play in ways that are intended or expected. Practices of governing, as well as institutions for governance, make a difference to outcomes for water places and people.

Hope

In the face of gross abuse of rivers through over-extraction, pollution, construction of large dams (and the false promotion of hydro-power as a 'sustainable' energy source), and the severing of peoples' relationships with rivers and lakes, we must find hope. Especially at a time of great environmental change and uncertainty, we need to imagine hopeful futures. In their call for 'geographies of hope and survival in an age of crisis', Castree et al. (2010, 1) offer 'an invitation to think and provocation to act'. These challenges await us in freshwater geographies. Perhaps the first step here is to creatively imagine the sorts of water places with which we want to live into the future; then think and enact the kinds of institutions and practices that will enable such places and relationships to flourish.

To find hope we might develop our critiques of existing models, and look to and learn from other ways of fostering relationships between people and water places. Existing institutions, practices and processes for governing water have emerged from particular social and political contexts. In many instances they continue to be imbued with and shaped by discourses of modernity (Kaika 2005) and legacies of colonisation (Gibbs 2009b). Looking to indigenous knowledge systems and practice may provide some guidance here. In Australia for example, concepts of Country and the notion and practices of Caring for Country emphasize relationships based on respect and reciprocity. Similar priorities might guide action elsewhere, such as in Te Awaroa described by Salmond et al. (*this volume*).

Governing freshwater places requires much more than clever design of institutions to facilitate decision-making about H₂O. The specificity and materiality of water needs to be central, and this involves more than water as substance or 'stuff'. It involves biophysical and socio-cultural assemblages and practices in particular places. Bringing place, matter and practice to our analyses will better prepare us to think and act towards hopeful futures. Before turning my back on the mangroves and leaving the river's edge I glance once more, with hope. Hope that these and other seedlings weather the storms ahead, as new regimes of *practice* emerge through competing demands on time and funding; as the *materiality* of the river shifts with altered land use and sediment flux; and as *places* are transformed with increasing salinity, as the fingers of the sea reach inland with sea level rise.

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