Social Water

Water connects. It brings people together, in collaboration as much as in conflict. Oceans have facilitated colonial expansion, slave trade and globalisation. Rivers have been arteries for the spread of people and ideas, and have fuelled upstream-downstream struggles. Water supply and sewage systems reflect the political differentials of (dis)connected households. And wells and springs draw thirsty travellers, animals and pilgrims together.

Some observers have claimed that the wars of the future will no longer be about oil, but about water. With the availability of clean water declining, both relatively and absolutely, violent conflicts about this ever-scarcer but relentlessly vital substance are likely to increase. Others, conversely, have shown how water issues may just as well foster unforeseen solidarities and new alliances, forging cross-border dialogue on the use and protection of common aquifers, rivers or seas. Water-related protests and social movements have garnered tremendous global resonance, of which the multi-ethnic 'Water Protectors' camp opposing the US American Dakota Access Pipeline is only one recent example.

Water has also been used to illustrate that distant processes are often intimately connected, for instance through the accounting technique of 'virtual water' that traces how much water has been used in the production of a commodity. Here, water is used as a global 'currency', a substance equivalent across the planet. Other water uses, however, defy this image of generalised water, and imply that we should speak of waters in the plural, rather than assuming water to be a singular element across contexts.

The privatisation and commercialisation of water continues to make headlines, and has led to massive – and sometimes successful – opposition around the globe. Many commentators regard the privatization of formally municipal drinking water provision as the epitome of neoliberal reform, with devastating consequences for those who rely on its provision, especially the less-well-off consumers. These discussions often invoke the tension between treating water as an economic good, or as a human right. Furthermore, buying drinking water in bottles is an established practice in Germany and many other places, which has come under severe criticism both for divesting money away from public water infrastructure and, where plastic bottles are used, for contributing to the gigantic amount of plastic waste polluting our oceans.

Such powerful connections about, with and through water must not be taken as fixed structures, however. Just as water keeps on moving, evaporating, seeping, freezing and thawing, these connections are constantly

being renegotiated. In the booming cities of the Global South, access to drinking water is subject to rapid changes in contexts of new legal and illegal connections, political favours and lobbies, and an uncontrollable infrastructure. In river deltas around the world, water regimes transform radically with upstream damming, large-scale flood control and irrigation infrastructures, unpredictable storm surges and the effects of local hydrological adaptations. And the melting ice and permafrost in glaciers and Arctic regions jeopardise water availability, travel routes and many other aspects of people's lives.

As a vital substance, water is an integral part of people's everyday lives and livelihoods. How it is involved in connecting and disconnecting people, and what meanings it acquires in those relations, is embedded in the wider social, economic and ecological context, which is simultaneously remade through water discourses and practices. Water is everywhere. It has social consequences, as much as society has hydrological consequences. Water is social, and sociality is watery.

Under the heading of 'Social Water', this issue explores the sociality of water and the wateriness of society. Contributions probe into the various connections and disconnections that water enables and inspires; the social relations through, about and with water; and the hydrological resonances of politics, religion, ethnicity, kinship, and knowledge, and other realms of social life.

Multiple Social Waters

Numerous contributions illustrate that once we realise that water is social, we also find out that water is not merely the single, universal substance, H_2O, that scientific abstractions and economic models might lead us to believe. Rather, water is always multiple, and we are often best advised to think of waters in the plural, rather than of water as a singular essence.

Francine van den Brandeler, for instance, describes how a problematic confluence of different kinds of water in Amalacachico, an informal settlement in Mexico City, makes life difficult for its human and non-human inhabitants. This place has a long and exciting history, for it is comprised of a network of canals originally built by the Aztecs prior to the arrival of the Spanish colonisers. Although recognized as a UNESCO heritage site, local residents continue to struggle for their basic rights including a legal clean water supply and a sewage system. Conservationists are also campaigning for cleaner waters, but for different reasons: the site is home to an endangered species, the axolotl. As van den Brandeler shows, polluted water, drinking water, wastewater, floodwater and the water in which the endangered axolotl lives are all connected in Amalacachico, but they are not the same waters. Referring to all of them by the same term, H_2O, might suggest the wrong problem formulations and therefore inspire unsuitable attempt to solve them.

Flore Lafaye de Micheaux makes a similar point in reference to the River Ganges. She illustrates how this river is more than a single flow of water, which has been recognized even by the explicitly secularist first prime minister of India, Jawaharlal Nehru. The author contrasts two imaginaries of a river: one as 'house', emphasising its physical and measurable dimensions, as economic and scientific approaches would; the other as 'home', emphasising its experiential, spiritual and emotional qualities, as the inhabitants of its banks, and sometimes even people living further afield, would. Lafaye de Micheaux suggests using the concept of the 'milieu' to understand how people can simultaneously inhabit both a 'house' and a 'home', and to trace how the perspectives on the river as either one or the other are the product of different relations between river and people, rather than an intrinsic attribute of either the water or the individual.

Ines Stolpe's contribution provides insights into the multipliplicity of waters in Mongolia, where traditionally, nomadic groups using the same water body would be united as the 'people of one water'. This social principle, however, does not apply to urbanised Mongolians, who feel no bonds with the other rural-to-urban migrants who share a 'water kiosk' with them. Furthermore, Stolpe sketches some of the different and changing meanings of water in Mongolia, a substance which has been considered 'black' and 'impure' until recently,

and is not to be mixed with milk, the white epitome of purity. With the introduction of modern hygienic perceptions of water, many of these meanings have begun to shift, and people have been adapting the related water practices. These creative reworkings, however, do not obliterate the multiplicity of different waters, but rather illustrate how Mongolians navigate in a world where water is not one, universal substance.

While these contributions, and others in this collection, show how water is multiple, Jamie Linton argues that even the idea of 'social water' has two rather different connotations, which may be difficult to reduce to a common denominator. Reflecting on his earlier work and recent readings and experiences, he illustrates how water is social in two senses. In the constructivist and political ecological sense that he elaborated in his book What is Water?, 'water is what we make of it', where the 'we' is a heterogeneous assembly of often conflicting interests and perspectives. Here he argues, however, that there is a second way in which water is social, namely in the way that it literally forms part of humans, so that there is no clear distinction between the inside and the outside, the constructers and the constructed, or the political actors and the political substance. This 'essential' form of social water must not be taken as an apolitical notion, however. According to Linton, it suggests that access to a healthy environment – including water – must be understood as a human right rather than the privilege of a few.

Connectivity and Infrastructures

A number of contributions illustrate how water flows are shaped by various infrastructures, past and present, state-planned, development-aid-funded, locally built, or private-enterprise-financed. These infrastructures don't always work as intended. They may be leaky, or exceed their purpose, or cause a plethora of unintentional effects. Therefore, when water connects people and places, this connectivity is usually a historically grown and politically contested relation.

The contribution by Jeanne Féaux de la Croix, Adhamjon Ashirov, Gulzat Baialieva, Aibek Samakov and Mokhira Suyarkulova, for example, demonstrates that the connections and disconnections afforded by the Central Asian Syr Darya River have been shifting in recent history. Some of these shifts have come about through large infrastructural projects like hydropower dams and irrigation schemes, but in spite of all their grandeur and catastrophic consequences (including the disappearance of the Aral Sea), these spectacular infrastructures leak and are fragile. They have been tied to particular political and economic contexts (such as the Soviet Union) and they easily disintegrate once these contexts vanish, affording yet new connections and disconnections in the ruins of the old. The authors conclude that a river basin must not be taken for granted as a spatial entity, but rather seen as something that emerges with particular political and infrastructural arrangements.

Sandro Simon delves into the various infrastructures that influence water flows in the Kenyan Tana Delta. He illustrates how the 100,000 delta inhabitants make a living by using creative strategies in an environment that is marginalized as 'wasteland' by the centre of Kenyan political and economic power. Understanding 'infrastructure' in its broader sense, as also referring to social, economic, and political relations between people, practices and things, the contribution discusses the complexities of space in an environment strongly shaped by water and its absence. Simon juxtaposes different (centrally organised and locally improvised) infrastructures, including the remnants of a large-scale irrigation project, community-built and -maintained tidal irrigation canals, and saltwater blockages. Thereby, he shows how water flows are channelled through a wide array of past and present social relations and imaginaries.

Franz Krause describes the complex system of historic timber-floating on the Kemi River in Finnish Lapland. He shows that while the river flows all by itself, it required a lot of human labour and technology to make it into a timber transport artery. Krause inserts these observations into the discussions about water and infrastructure, reflecting upon whether the labour and technology turned the river into infrastructure, or whether it had always constituted infrastructure, just not the kind that large-scale industrial forestry required. This contribution concludes with a cautionary remark about the burgeoning use of infrastructure, asking what

analytical and political effects it might have to call a river 'infrastructure' rather than another term, and suggesting that a river may be (called) many other things, too.

Large Dams and their Discontents

The following two contributions focus on one particularly prominent form of water infrastructure – the large dam – and its social consequences. Infamous for their displacement of tens of millions of people around the world, large-scale dams have been severely criticised for their social, economic and ecological unsustainability. Nevertheless, they continue to be built in many places, often for their purported cost efficiency or for their alleged climate benignity (in the case of hydroelectricity generation) or food security (in the case of irrigation).

Juan Pablo Hidalgo-Bastidas, Sytske Susie Jellema, Leontien Cremers and Félix Narváez introduce a documentary project in the making. Their film Above Water is set in Ecuador and shows the consequences of a governmental development project for the local population by focusing on the life and struggles of an Ecuadorian woman, Bella. She and her family were displaced and strongly affected by the building of a hydropower dam, and now live in between the dam and a banana plantation that exposes them to a contaminated and unsafe environment. While the documentary is still in the making, readers can learn more about the story behind the film and watch the teaser, which gives some visceral impressions of the everyday life of the victims of 'progress' and the dirty effects of 'clean energy'.

Lucigleide Nery Nascimento's contribution takes us to the Northeast of Brazil. It introduces us to the São Francisco River, the basin of which is home to nearly eight per cent of the Brazilian population. The river is threatened by a combination of large-scale governmental hydropower developments and the vagaries of an unstable climate, which endangers the entire ecosystem and the people who depend on it. Exacerbated by the withdrawal and withholding of river water at the dams, droughts along the river affect large parts of the local human and animal population, leading to hunger and starvation. Overall, Nascimento paints a rather bleak picture of the São Francisco River, exploited for national development goals and international export markets, a former "ocean river" progressively drying up as minimal flow regimes are not met.

In their collaborative contribution, Simon Borja, Joel Cabalion, Vinod Chahande, Julien Jugand, Philippe Pereira and Dhammasangini Ramgorakh use multiple registers – text, images and a song – to illustrate how a current water struggle has deep historical roots. Around the Gosikhurd dam and irrigation project in Maharashtra, India, they trace on the one hand how the distribution of winners and losers in modernist water project mirrors and reinforces older inequalities of water access between high-caste Hindus, and Dalit (low-caste) and Adivasi (tribal) people. On the other hand, the authors show the unequal distribution of water is a strong mobiliser for opposition, which builds equally on a long history of social movements fighting against injustices in the region. With increasing droughts, pollution and a lack of fair distribution of water, 'Fighting for water rights is akin to struggling generally to get one's position in society recognized'.

Water Perspectives and Approaches

While water infrastructures like large dams thus produce winners and losers, water and water bodies may also give rise to particular ways of seeing and imagining. Perceiving a place from the water, rather than from the land, might provide a rather different understanding of that place. Conversely, looking out on an expanse of water can have different social and imaginary effects that contemplating a view of the land.

Gerda Kuiper takes us on a boat trip to Lake Naivasha in Kenya. Her descriptions along with her photographs allow us to witness scenes that are invisible from the roadside. The lakeside view is particularly interesting, she explains, because it allows us to discover the very different economic activities and lifestyles pursued around the lake, ranging from migrant worker settlements to abandoned flower-farm owners' houses. Kuiper contrasts her view from the water (here the undifferentiated lake) to the view from the road on the land,

explaining that the two suggest rather different kinds of life: where the road view signals separation and invisibility of the various activities and groups through fences and vegetation, the lake view suggests interaction, mixing and visibility. Such differences in 'approach', Kuiper proposes, warrant reflection in ethnographic research.

Tijo Salverda, in his contribution, discusses how in exclusive seaside resorts the vast emptiness of large water masses may also facilitate exclusivity instead of just being appreciated for their aesthetic nature. With only a horizon in the distance, views of uninhabitable oceans allow affluent elites residing in the resorts to (temporarily) escape from the everyday realities of a world they share with the less affluent. Where the ocean is imagined as a socially and politically empty space, and where it acts as a pragmatic barrier to people's movements, it can afford exclusivity to the elites in their seaside resorts.

Potentialities of Water-Land Mixtures

Very often, water is entangled in social lives not as a pure substance, but as a mixture with other substances, as in marshes, mud, swamps, beaches and coastal areas. Some contributions explicitly explore social and cultural dynamics in and through such mixed matter and suggest that it is particularly in such muddy mixtures that water's life-sustaining potentialities are realised.

Caterina Scaramelli's evocative vignettes and images from her ethnographic fieldwork in the Turkish Kızılırmak Delta pay close attention to different mixes of water and land in everyday practices of work and householding. The delta is saturated with and produces all kinds of water in the context of people's gardening, animal husbandry, dairy processing, rice agriculture and fishing. The life she describes is one of always attempting to coordinate different spatiotemporal dynamics – including those of the weather, plant growth, religious duties and kinship relations – in order to keep up with the delta's rhythms of wetting and drying.

Matian van Soest, subsequently, investigates the growing pressure on wetlands around Kampala, Uganda. Because the city is expanding, and an emerging middle class is striving for affordable and pleasant housing on the urban fringes, the wetlands are shrinking. This jeopardises the regional water resources, as the wetlands used to filter and clean the water. Soest demonstrates how this process is not random encroachment, but the product of a highly problematic land-tenure system with roots in the colonial conquest of Uganda. Wetlands, in this account, figure as places of last resort for people who have been effectively disowned, places that are unsuitable for predatory real estate developments, and places that now offer opportunities because they had been neglected as marginal lands in former property claims.

Kaleo Sansaa presents a poem that is filled with emotion and melancholy and evokes feelings of childhood, roots and diaspora. Spoiled Children opens up spaces for childhood memories and experiences of transformation by using various metaphors. Water provides striking images in this poem, for example in the form of rain and raindrops, which connect the lyrical persona and the addressee to past and future, to childhood and ancestors, to memory and healing. Water also prominently figures as 'mud' and as part of the soil, to which people belong. Sansaa evokes the rainy season that produces this mud as a powerful, creative event of 'ancestral whispers', which may facilitate a postcolonial, diasporic re-awakening (and re-wetting), a transformative but equally painful process, marked by with tears, yet another form of water.

The Sociality of Flooding

Whereas watery mixtures may enable agriculture, provide ecosystem services and signify belonging and rebirth, the absence or overabundance of water tends to cause crises and catastrophes. Two contributions deal explicitly with flooding, and demonstrate that such events are as social as the floodwater itself. Rather than 'natural disasters' with causes and effects, as described by hydrology, meteorology, economics, and demography, floods are also shaped by historically grown social and infrastructural elements – they are experienced, remembered and combatted by socially and culturally situated people.

Lukas Ley has contributed a teaser – both in text and video form – about a phenomenon called 'rob' in the Indonesian city of Semarang. Rob is caused by tidal flooding of a river that is actually a sewage canal, haunting one district of the city while draining wastewater out from the urban centre. In writing and in video, Ley illustrates that rob is not just a matter of rising waters. Rather, this irritating and dangerous flood it is about tidal rhythms as well as about the residents' sense of cleanliness and resilience; about land subsidence and colonial legacies of canal digging; about the political ecology of drainage and the sense of time and purpose; about environmental degradation, climate change and urban planning. In short, rob is a cultural, political and social phenomenon as much as it is the rising of Semarang sewage into people's homes.

Following on from this, Patricia J. Rettig explicitly argues against the tendency to reduce floods to physical events expressed in numerical accounts (amount of water, intensity of rainfall, cost of damage, etc.). Instead, with her story of the 1976 flash flood in the Big Thompson Canyon, Colorado, US, she suggests that human memories and narratives can provide an account that 'inspires true understanding and empathy' of such an event. Rettig's story is based on a wealth of archival material, including recorded accounts/interviews, available online at 'The Big Thompson Flood Collection' in Colorado State University's digital archives, and proves the value of such collections. In this case, part of this value lies in the material's ability to evoke and reconstruct the multiple dimensions of a flood, including the emotions, stories, hopes, fears, and explanations that people had during and after the catastrophe. Rettig emphasises that the account also 'shows us the impact of unpreparedness', suggesting that people might learn from such accounts. Indeed, the Big Thompson Flood led to an improvement of disaster warnings and communications, recovery procedures, and local floodplain regulations across the US.

Negotiating Fishing and Water Rhythms

If water comes and goes, sometimes more regularly and at other times less so, the same is true for fish and other aquatic life. These rhythms have implications for the fishing practices of the people who depend on the waters and fish, which often involves not unproblematic matters of adaptation and resonance, and comes with various hardships and tensions.

Mouazamou Ahmadou and Sarah Laborde's short film about canal fishermen in the Logone Floodplain in Cameroon illustrates both the ingenuity of this particular fishing technique and the social tensions that can develop around it. During the dry season, people work strenuously to dig canals through the riverbank, connecting the river to the floodplain beyond. Towards the end of the wet season, these channel the floodwater, along with the fish that have hatched and grown in the floods, back into the river. Through a carefully constructed and timely inserted trap, the fishermen catch large numbers of fish with this technique. Some years bring abundant floods and fish, others bring no floods, and therefore no fish either. But this very successful fishing model has spread so much that the increasing number of canals has fuelled competition and tensions among established canal owners and newcomers. While these are mostly non-violent, rival canal owners frequently accuse one another of using magic and poison to guide fish into one canal rather than another.

Michael Vina explores the multispecies relations that make up coastal communities in Ecuador. His contribution shows how the interactions between El Niño, precipitation, fish populations, mosquitoes, pathogens, and traditional and state-induced infrastructures form a rhythmic and unstable whole that includes humans and their preferences, experiences and practices, but is not limited to them. A regionally particular form of drizzle, in this view, is not only a meteorological phenomenon, but a part of local subjectivities and histories, which are not easily replaced by (repeatedly empty) state promises of modern piped water – a situation that has proven beneficial for the coastal communities, as Vina elaborates.

Communicating Social Water

As a number of contributions in this issue suggest, how we approach water often depends on the cultural

context in which we have grown up. From a young age we may have learned about the needs and/or dangers of water, or how to navigate an abundance or shortage of water in our lives. Yet with large-scale technical projects that harness the might of water, such as dams, and also because of global climate change, many people will probably have to relearn about the place of water in their lives. In urbanised and complex societies where relations with water are increasingly obscured, this may mean they virtually have to start from scratch again. Access to tap water is after all often taken for granted, with little knowledge about the infrastructure behind it. In the case of sewage systems, many equally refrain from wondering where their waste ends up – though for better or for worse, the growing attention to the 'plastic soup' dumped in our oceans may raise awareness that the waste doesn't just disappear.

We are witnessing an increasing number of initiatives aimed at educating local populations about water in all its variety, addressing the shortcomings of existing knowledge and meetidng the challenges that may lie ahead. This might take the form of a university course with a view to prepare social anthropologists for work in the water sector; an art and design exhibition aiming to raise awareness of a city's 'hidden hydrology', or an out-of-school centre teaching schoolchildren about the urban water cycle. In Cologne, for example, where the editors of this collection are based, the Cologne Wasserschule (Water School), established in 2011, offers children from a young age the opportunity to learn about drinking water, wastewater treatment, the ecology of streams in and around the city, the quality of water, and flood protection. In collaboration with the relevant institutions, the school hopes that about 7,000 local children per year can obtain a better understanding of the role and circulation of water in their lives. Assuming that many children lack an experience and understanding of water flows beyond the tap and drain, the idea of the Wasserschule is to create opportunities for schoolchildren to reconnect with the otherwise hidden and unknown aspects of water infrastructure, water cycles and water ecology in and around Cologne.

The two final contributions in this collection provide excellent examples of other initiatives that share experiences of communicating the insights of the sociality of water and the wateriness of society to different publics, and of applying some of those insights in non-academic settings. Douglas McRae documents an intervention in an increasingly urbanised world where people's direct dependence on water is often obscured. He notices that city inhabitants only realise their relation with water in moments of scarcity (periods of drought) or overabundance (flooding). In São Paulo, Brazil, as his contribution nicely demonstrates, a collaborative effort by researchers and designers is intended to counter this lack of knowledge. Through an exhibition combining history, geography, ecology, and visual art, they aim to communicate a vision of the city's hydrological realities. The exhibition reawakens, as McRae calls it, the 'aquatic memory of the city'. This is to recreate an awareness of watersheds and water flows in the city, and enable people to reconnect with hidden and built-over rivers in order to reverse their pollution and mistreatment.

Finally, resonating with the professional background of many of this issue's contributors, Karlheinz Cless shows that at the university level too, social water is an increasingly prominent subject. He reports about the research and teaching around water at the Department of Social and Cultural Anthropology of the University of Frankfurt, Germany. He details some of the contributions and findings from the international workshop that the department held to inaugurate this field, and he describes a course on water commercialisation that he has been teaching. In his teaching and research, he places particular emphasis on the ubiquity of society and culture in what might otherwise pass as 'technical' water relations, such as infrastructure and privatised water provision. Cless's work also foregrounds that a 'social water' perspective is valuable not only in academia, but also in applied fields like development cooperation and water utilities, among others.

We can only applaud initiatives like these. In a world where concerns about water become ever more prominent, such educational initiatives may help us grasp that water is part and parcel of our social and political relationships, of economic distributions and dependencies, and of cultural meanings and imaginaries. Learning about this exciting substance that we cannot live without must not stop at its physical characteristics; we must also become aware of how this fluid and ephemeral material is implicated in the very constitution of our social and cultural worlds.