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Parsing the Politics of Singular and Multiple Waters

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ABSTRACT: This Special Issue explores the politics of heterogeneous waters. Modern technoscientific water management regimes have driven the consolidation of power over water and those who use it through a material, cultural, and political process of centralisation and homogenisation. Despite this expanding uniformity, numerous scholars have called attention to the thriving heterogeneity of waters and water cultures. How do we reconcile these two views? In this introduction to the Special Issue, we propose that the relationship between water and waters is not either/or, as water/waters, but rather something more simultaneous and conjoined: water-waters. This approach displaces conceptual and temporal (before/after, premodern/modern) dichotomies and recognises that the processes through which water is made homogenous or heterogeneous (or both) are distinctly political. We conclude by introducing the anthropological and historical contributions to this special issue, which examine the political effects exercised by various kinds of waters and how people deal with the manifold permutations of water's multiplicity. The articles assembled here show how uniform 'water' rarely fully replaces or displaces 'waters' materially or ontologically, but rather that they coexist in a tense and dynamic political balance.

KEYWORDS: Multiple waters, modern water, water cultures, dialectics

This Special Issue explores the spectres of water's multiplicity and the politics that emerge when diverse waters coincide. Over the long *durée*, technoscientific water management regimes have driven the consolidation of power over the resource and its users through a material and political process of centralisation and homogenisation. Despite this expanding uniformity, numerous scholars have recently pointed out the thriving heterogeneity of waters and water cultures. In the articles presented here, we explore the political processes through which both the homogeneity and heterogeneity of waters are produced, as well as the political effects exercised by diverse waters. The contributions to this Special Issue engage with existing scholarship in two distinct ways: First, they illustrate how homogeneous 'water' rarely fully replaces or displaces heterogeneous 'waters' materially or ontologically, and show the dynamic politics of the coexistence of 'water' and 'waters' paradigms. Second, the articles assembled here explore the diverse permutations of water's multiplicity, analysing not only the different ways that people construct and conceptualise the multiplicity of their waters but also the political effects of those different meanings of multiple.

The contributing authors grappled with a set of common questions: What are the registers of water's multiplicity? How are waters that are conceptualised as heterogeneous and multiple made commensurable? What politics are set in motion by conceptualisations of water that cast the substance as homogenous or universal, such as those offered by scientific theory or tapwater providers? When do conceptualisations of uniformity or heterogeneity break down? How do distinct material qualities of

water and waters influence the ways people attempt to control, hold, or govern them? How are unified fields of water-waters relationally and politically constituted and what are their political effects?

Etymology gestures towards water's heterogeneity, for it suggests the myriad ways that seemingly distant languages and historical epochs continue to live within our terms of discussion. The word 'water' derives from the Indo-European root of *wodor/wedor* and has many close relations across contemporary European languages (*Wasser*, *water*, *vatn*, and *voda* in German, Dutch, Icelandic and Russian, respectively). The roots of the English word 'river', as it travelled and changed through various languages, embody ideas about the relations between people and the environment; it derives, via Latin, from Greek words pertaining to cliffs and erosion – processes integral to forming river banks, the earthen boundaries of a river's edge; over time, it came to form 'arrival' (to reach the other bank or side) and 'rival' (one with whom one shared a stream and therefore surely fought) (Tulloch, 2014).

The task of discussing heterogeneous waters in English is made difficult by the suppression of water's plural form, 'waters', which has been relegated to increasingly rare and esoteric usages such as 'testing the waters', 'taking the waters', 'muddying the waters', and 'waters' as a vernacular term for amniotic fluids. 'Water' has become, by most conventions in the English language, a word without a plural, what linguists call a 'mass noun', that can only be counted in particular units of measurement (e.g. "2 litres of water") or other quantifying signifiers (e.g. "some water", "a lot of water"). But as a mass noun, is 'water' like 'earth' – a word that immediately collapses multiple forms (and their trajectories of potency and experience) into a single undifferentiated object? Or is it more like 'universe', a concept that is hardly internally undifferentiated and, until recent proposals of 'many-worlds' and 'the multiverse', could contain no greater degree of wholeness or plurality? These questions crudely demonstrate what specialists in linguistics know quite well – that mass predication is filled with innumerable semantic and syntactic ambiguities (Nicolas, 2018). These are some of the ambiguities that we begin to specify and explore here: just how are waters multiple?

We can begin by simply paying more attention to the many forms that water takes. Some physical states (e.g. as liquid) and material forms (e.g. rivers) of water have dominated the attention of scholars and the metaphors that animate (or as Stefan Helmreich puts it, "machin-ate") our social theories (Ballesterio, 2019; Helmreich, 2011; Steinberg and Peters, 2015). The study of rivers, reservoirs, canals and pipes does not equip us to fully understand the politics and socialities surrounding other states and forms of water such as fog, groundwater, mud, ice or snow. As glaciers melt in our changing climate, we are beginning to understand the kinds of water that they are and become (Carey, 2010; Cruikshank, 2005). Aquifers confound categories because they mix earth and water and we know them scientifically by fusing geology and hydrology (Babidge et al., 2019; Ballesterio, 2020; Walsh, This Issue). Mud also challenges the 'water-land binary' (Lahiri-Dutt, 2014; Cortesi, 2018), as indicated by the old Anglo-American saying that rivers with high sediment loads are "too thick to drink and too thin to plough". But even rivers, ever-changing in their velocities and forms, can 'jump' course and swell beyond their banks, sometimes splintering into variegated waters as they do (Sharma 2020). The spectrum of water's materiality is much broader and more consequential than past scholarship recognised.

From the language we use to talk about various waters to their diverse and lively materialities, these matters are fundamentally political. Water – and talk about water – is a favoured medium for political work, and water's access and control both reflect and forge structures of authority, power, subjugation, and harm (Bakker, 2012). We thus draw upon the large body of literature that has shed light on many key political actors, institutions, manoeuvres and consequences and has guided the creation and reform of important water management institutions (Pacheco-Vega, 2014; Schmidt, 2017). Classic work in anthropology and history used water as an index to assess the centralisation of power and of human settlement patterns; it theorised that tight control of water, particularly with large-scale irrigation works, effectively concentrates state authority, often leading to the increasing subjugation of citizens (Steward, 1955; Wittfogel, 1957; Geertz 1972; Reisner, 1986; Worster, 1992; for a counter view, see Lansing, 1991). More recently, scholarship on water in the humanities and social sciences has often dovetailed with

grassroots activist movements to critique the widespread plays to privatise water, including through dam and canal infrastructures and water extraction for beverage markets. Such work focused on the subsequent economic burdens and often literal dispossession from land and water that privatisation, commercialisation and dam construction has brought upon hundreds of millions of people around the world (Roy, 1999; Shiva, 2002; Bakker, 2003, 2013; Baviskar, 2004; Albro, 2005; Aiyer, 2006; Barlow, 2007; Kaplan, 2007).

Building on this past scholarship, we aim to document the shapes that power takes when it operates through the material control of waters, and to further trace the larger consequences that such machinations have on societal structures, governmentality, morality, citizenship, biopolitics and socionatures. We place importance upon research processes that not only trace power and harm but also can recognise the knowledge, experiences and subject positions of water activists and those most vulnerable within a given hydrosocial and political regime. In addition, we aim to contribute to a number of recent discussions. First, more so than has been understood until recently, political power lies not just in the physical control of water, and can also be achieved through discursive or semantic means (Roy, 1999; McCully, 2001; Wolf, 2008; Rademacher, 2011; Neimark, 2012; Zeisler-Vralsted, 2014; Ingersoll, 2016). Second, recent approaches show that control over and access to water can be much more tenuous, and can be asserted by a wider array of actors and entities, than has previously been acknowledged (Gandy, 2014; Björkman, 2015; Storey, 2016; Anand, 2017).

Third, and perhaps most important for the papers in this Issue, we engage with recent work on water and power from the humanities and social sciences that has questioned the modernist assumption that water is a uniform and homogeneous entity. Classic work on water and society produced in the mid-twentieth century relied on this stable and flat backdrop to more starkly outline the politics and social organisation of hydraulic communities and societies and to map modern infrastructures. Recently, however, historically-minded social scientists have destabilised these assumptions by describing how homogeneous water itself was created conceptually and physically through engineering and science (Banister and Widdifield, 2014; Goubert, 1989; Linton, 2010; Melosi, 2012; Schmidt, 2017). Advances in research show that as hydraulic infrastructures have expanded over the last 500 years, multiple unique waters were brought together and homogenised to create a single substance whose quantities and qualities were subject to uniform measures and standards and scientific concepts that stressed its most basic, chemically defined, composition – H₂O (Linton 2010). This is 'modern water', and it flows through the pipes and taps of the world's cities, the canals of large irrigation systems, and even the rivers, lakes and aquifers that have been integrated functionally into our infrastructure (Carse, 2014). It is managed by bureaucracies operating with "high modernist" (Scott, 1998) pretensions of planning and control and, over the last hundred years or so, has been embedded in a global philosophy of "normal water" that is rooted in evolutionary social science and focused on scarcity and security (Schmidt, 2017). Public water system managers go to great lengths to convince their ratepayers that their tap water is uniform, potable, unremarkable and better than costly bottled water (Spackman and Burlingame, 2018; Spackman, 2020). To the degree that they are successful in this, heterogeneous waters fade from view; indeed, the predominant experience many people have of water – especially those living in developed urban areas who tend to be the ones who write about it – is one of homogenised, chlorinated tap water. Many people are not aware of the cultural and physical specificity of the sources of water that they use, nor of the histories of expropriation and labour that have brought it to their taps.

The rise of modern waters did not eradicate the varied, specific 'waters' that exist in one place or another and are used, experienced, and conceptualised in particular ways. Alongside H₂O, Ivan Illich (1985) might say, are the "waters of dreams" – all those diverse forms and sources of water that people continue to engage with, even as they draw water from taps, pipes, dams and canals. Often scholars locate these waters in the past, before homogenisation by the science of chemistry or the modern philosophy of water management; or, in our own times, such heterogeneous waters may be located beyond the reach of modern infrastructures and outside of "sanitary cities" (Melosi, 1999), or in places

where there are people with radically different socionatural practices. Historically, while multiple distinct waters may have been grouped together as a single element based on their shared properties such as wetness, they were nonetheless considered to be unique and individual (Hamlin, 2008). The meanings ascribed to waters are deeply complex; they emerge in particular contexts that involve specific environmental settings, sensorial interactions, cultural traditions, groups and individuals (Strang, 2004). Multiple waters are created through multiple cultural enactments by assemblages of people, infrastructures, ideas and environments. These heterogeneous waters are often "enchanted", that is, invested with intrinsic powers bestowed by divine creation (Guillerme, 1988; Rodriguez, 2006).

The recent proliferation of ontological approaches in anthropology strengthens a general appreciation of heterogeneity. These approaches often argue the deeply constructivist position that different groups of people, in living out their diverse cultural understandings, bring into existence qualitatively distinct socionatures (Descola, 2013; de la Cadena, 2015; Escobar, 2018). This approach is more than a recognition of multiple cultural understandings of a single natural world, for it argues that there are multiple, distinct natures that are culturally produced and entwined. Material substances act upon people, and vice versa; boundaries between living and non-living and between human and non-human are blurry, and semiotic complexes give rise to thought and action that span all of animate matter (Bennett, 2009; Kohn, 2013). Regardless of the modernist goal of creating a singular substance, a wide range of performative engagements with waters makes them unique and multiple; their heterogeneity is both as real and as culturally constructed as the universal water of modern technoscience, even if the latter often claims a monopoly on realism. Examples abound, such as in the Tagish and Tlingit oral traditions wherein personhood and agency are conferred on glaciers, and where divisions are not drawn between a glacier and the river it feeds (Hayman, 2018). Another example of waters' heterogeneity comes from the classical Mediterranean world, where the particular geographical origins, histories and qualities of waters from springs, lakes, streams and rivers made them unique things with specific uses and effects (Hamlin, 2008). The focus on heterogeneity, and the dualism inherent in the water-waters framing, are powerful because they highlight long-term societal and cultural shifts and conflictive histories of, and against, extractivism, dispossession and state formation. This opposition enables us to map cultural differences and unequal water access onto social formations, creating a strong basis for arguments about environmental justice.

The framing of waters as radically different from water suffers for its strengths. There is a tendency to tidy up history into a developmental tale of before and after, in which traditional water cultures have been superseded by modern water cultures. Linear and epochal framings of historical process accentuate change and do not always adequately come to terms with the enduring material and social legacies built into waterscapes (Galvin, This Issue). Narratives of a contemporary water crisis (Shiva, 2002) and the decline of modern infrastructures remind us that hydraulic modernisation is not a unilinear path of increasing complexity and scale; at the same time, these narratives tend to foreground the coherence of the modern water that is said to have eclipsed pre-modern waters and to now be waning. The goal and the real achievement of bringing homogeneous, low-cost, potable water that is free from pathogens and contaminants to households ('clean water for all') is unquestionably laudable; it contributes, however, to a widespread "myth" of the universality of modern water in the developed world (Meehan et al., 2020) and perhaps to overestimations of the global dominance of modern "normal water" (Schmidt, 2017). Ontological approaches also tend to narrate the divide between waters and water in an epochal mode (before, during and after the modern) that separates contemporaneous but incommensurable cultures (see Bessire and Bond, 2014).

The articles grouped in this issue contribute to a relational approach that counters the oppositional framing of water and waters (Linton and Budds 2014; Harrington 2017; Krause and Strang 2016; Arsenault et al 2018). We recognise homogeneity and heterogeneity, but use fine-grained historical and ethnographic research to explore their tense mutual production and interdependence. It is becoming ever more apparent that the idea of homogeneous modern water is tenuously held. This is the case both

in the developing world, where much of the population lives beyond the reach of the infrastructure that sustains it (Storey, This Issue), and in the developed world where consumers are increasingly attracted to heterogeneous bottled waters (Wilk, 2006), where urban water systems fail (Radonic and Jacobs, This Issue), or where they never functioned as they were imagined to have done in the first place (Meehan et al., 2020). Jeanne Féaux de la Croix (This Issue) shows us how residents of the Syr Darya river basin in Central Asia hold multiple, overlapping ideas of what water 'is', some of them with ancient roots but all of them contributing to the modern politics of the nation-state. Similarly, Lindsay Vogt (this Issue) addresses how multiple, contending understandings of water can be operationalised in a single development programme or policy. The heterogeneous waters we encounter today are often defined by chemical or biological pollution and are the product of industrial modernity rather than bastions of non- or pre-modernity (Bouleau, 2014; Guillerme, 1988: xi; Radonic and Jacob, This Issue). And this is not new; for example, assumptions about the effective qualities of heterogeneous waters were integrated into, rather than displaced from, the modern science of chemistry as it unfolded in Mexico (Walsh, This Issue). Schmidt (2017) argues that there was a similar incorporation of ideas about heterogeneity, contingency and material agency in the philosophy of 'earth-making' that was developed by geographers and anthropologists in the US at the end of the 19th century and which continues to define water management globally today.

Heterogeneity and homogeneity – which would seem to be at the root of the conceptual opposition between waters and water – are distinct yet inseparable and mutually defining concepts. Alongside and within the uniform liquid that is concocted with uneven success by techniques of dispossession, large-scale modern infrastructure, science, and the modern ideals underpinning water resource management, there are a multitude of heterogeneous waters that continue to thrive (Strang, 2004; Walsh, 2018). Communities continue to contest capture of their local waters and to assert control over them; they are often informed by historically deep traditions and socionatural idioms, but use enumerative techniques of commensuration and equivalence to draw multiple waters into a shared political field (Li, 2015; Vogt, This Issue). Homogenous public water is certainly created, but it is by necessity drawn from multiple sources and is treated, bought and sold (or taken and given) according to its specific constituent properties. Modern water begins with a serious recognition of difference, and it never quite becomes a fully uniform substance.

There is a cultural dialectics in the water/waters dynamic that is useful to consider. Much environmental Marxism focuses on the relation between humans and nature by developing the concept of social metabolism (Bellamy-Foster 1999; Linton and Budds 2014; Heynan, Kaika and Swyngedouw 2006; Martinez-Alier 2009). Here we explore a different, but related issue. As Marx (1990) laboured to explain in the first volumes of *Capital*, the fusion of use value (heterogeneity) and exchange value (homogeneity) in a commodity lies at the heart of the modern socioeconomic system, of the way we confront the things produced by that system, and of wider understandings of the material world. Even mass-produced commodities are unique material objects occupying space and serving specific uses, and it is these 'use values' that define their heterogeneous character. At the same time, these multitudinous things can be considered collectively and in relation to each other in terms of the human labour involved in their production or the money they can be exchanged for, and this is their homogeneous 'exchange value'. More than a few theorists have drawn connections between the cultural form of the commodity and modern techniques of commensuration and equivalence that enable people to draw unique socionatural things into a unified field of political and economic valuation (Lukács, 1971; Sohn-Rethel, 1978).

Heterogeneity and homogeneity produce each other through a process of "real abstraction" (Toscano 2008). This insight from Marxist dialectics echoes through various other approaches. Queer studies has a clear understanding of the contraposition and mutual interdependence of the homogeneous and the heterogeneous (Jagose, 1996), and feminist ecology has developed the important critique of the gendered nature-culture binary (Plumwood, 1993; Haraway 1987). Andrea Ballesterio (2019) shows that

the opposition of water to waters also relies on another false dualism, that between water as a commodity and water as a human right. She demonstrates that these opposing ideas of the liquid are produced by an ongoing process of conceptual "bifurcation", but both rights and commodities are constructs forged in cultural practices of equivalency and commensuration that are particular to modern, capitalist societies. Like capitalism, liberalism is an historically particular (modern) sociocultural form that produces homogeneity and heterogeneity in one movement (Schmidt, 2017).

We enter these conversations by assessing the varied character of water's multiplicity and how people deal with it in various situations, from the negotiation of water filters and bottles (and the waters that come from them) when a water infrastructure has collapsed (Radonic and Jacob, This Issue) to the documentation and categorisation of waters in an earlier era of chemistry (Walsh, This Issue). Some papers identify and analyse the interactions of distinct unique waters while other papers (such as that by Vogt, This Issue) examine the multivalence of a shared water. Galvin (This Issue) shows how water's multiplicity may exist as a kind of temporal menagerie of meaning, materiality and legal structure through which water becomes known when different regimes of exploitation and extraction become attached to it at various points in history and cascade forward in time. These divergent analyses of water's multiplicity show that there are many ways in which water is made multiple as people interact with and imagine it. Attending to the various permutations of water's multiplicity not only makes for deeper and more enriched ethnographic data; it may also offer clues about the politics of water in a given time and place and can expand the terms and divisions within our scholarship. Are we talking about colonial legacies, infrastructural failures and improvisations, or about ontological struggles? These political configurations are embedded in how water is multiple and in the aspects of water's multiplicity that become particularly salient in a given moment.

In her article (This Issue), Jeanne Féaux de la Croix presents a fine-grained ethnography of waters and water in the Syr Darya river basin, which drains into what was once the Aral Sea. Féaux de la Croix distinguishes between three 'incarnations' of water and the associated cultural understandings of those waters and their sources: modern water as a resource, flowing in large rivers and impounded behind dams; multiple enchanted waters of lakes and springs; and the waters of glaciers that, as they melt, morally index the effects of anthropogenic climate change. These incarnations of water 'stick' to the different landscapes in the lower, middle and upper reaches of the basin. By recognising how these separate waters and their cultural constructions flow together, Féaux de la Croix is especially well positioned to show how homogeneity and heterogeneity hang together politically in the water cultures of the Syr Darya. Those who live with the waters of the Syr Darya hold multiple understandings of them at the same time, with little apparent dissonance among those different understandings as they align in various constellations of national sentiment. Less visible in these incarnations of waters/cultures is the gendered experience of women in postsocialist Kazakhstan and Kyrgyzstan who have been denied access to the river and its various waters for swimming. By lingering a while on women's engagements with the Syr Darya, Féaux de la Croix reminds us of the many ways that waters are produced in particular political contexts.

The politics of multiple waters has a temporal dimension, for waters carry memories along with other sediments. Conversing with scholars of race and plantation society, Anne Galvin (This Issue) argues in her article that the Black River in Jamaica is made of accumulated histories of struggle that are "collapsed" into the waters that flow in the present. The Black River was, like much of coastal Latin America and the Caribbean, a plantation zone where Indigenous populations were eventually eradicated by the conquering Spanish and where enslaved Africans were brought to work. Today's residents plot their lives on this arc of hundreds of years of subsequent racial capitalism. The way local people interact with the river and its resources is a continually unfolding process of domination of land, people and water by wealthy masters, a process which defies chronological portrayals of progress. Sugarcane growers change the topography to accommodate their crop, channelling and impounding the river's water and polluting it with the organic by-products of sugar production, silt and chemicals; this deprives locals of the fish that

make up a staple of household diets and economies. Residents inscribe their own practices of life-making in this contested landscape as they seek access to the river. The ongoing relationship of domination, and the trauma that it generates, shape the ways that residents understand and engage with the waters of the Black River, and shape the materiality of the water itself.

Casey Walsh's article (This Issue) presents a history of competing but overlapping paradigms of water in Mexico City. These are organised around, on one hand, 'waters' as a heterogeneous and multiple entity that is seen to have virtuous and curative properties and, on the other, 'water' as a sanitised and sanitary good to be distributed by modern infrastructures. The tensions between these two paradigms materialised, respectively, in the spaces of the communal bath – an institution that occasioned an array of intimate and immersive encounters among the middle class and elite – and the individual shower, a design innovation promoted among public health specialists to eliminate not only the sensuality of communal immersion but also the all-too-public uses of city fountains for bathing and washing among the poor. These changes in bathing cultures expressed frictions between the scientific disciplines of chemistry and biology, another arena where struggles over the idea of water/s were worked out. During much of the colonial era in New Spain, the field of chemistry was trained on classifying the properties of diverse waters and researching their curative effects; however, new methods and findings from the nascent field of microbiology increasingly treated these waters as a single homogenous substance that bore the presence of various impurities which could be extracted or mitigated. As these tensions between waters and water materialised in the public and private space, practices and meanings of bathing shifted and scientific disciplines (and the policy-management regimes they informed) were restructured. Walsh's history shows, however, that one paradigm did not fully replace the other and that, instead, water and waters were and continue to exist simultaneously.

Following Walsh's documentation of the material and cultural incursions of 'water' into 'waters' – which were both facilitated by, and made further manifest in, infrastructural changes – come two papers that articulate the vital cognitive labours that are required when there is a failure of the ideals and infrastructures of modern, homogenous, sanitary water. Based on research conducted in two cities that have been rocked by water crises in recent years, Radonic and Jacob (Flint, Michigan, in the United States) and Storey (Cape Town, South Africa) analyse the insufficiency and collapse of urban water infrastructure. These articles show how the failure of planning and management regimes to recognise water's multiplicity can have grave consequences ranging from the denial of social citizenship to harming the health of urban citizens.

The article by Lucero Radonic and Cara Jacob (This Issue) examines the breakdown of assumptions of singular modern water in the wake of the water crisis in Flint, Michigan, paying particular attention to who suffers and how. Years of deindustrialisation and of disinvestment in infrastructural and social services led to the contamination of public water supplies with dangerously high levels of lead when state-appointed emergency managers, in an effort to reduce costs and establish administrative autonomy, switched the city's water supply to the Flint River. Middle-class African-American women suffered the burden of obtaining safe water for their families. Their burden was physical, as women handled large cases of water week after week; it was also economic, as they reserved extra time and energy to secure bottled water at distribution centres, and extra money when those supplies were unavailable; the burden was also emotional, as they confronted a large spectrum of new uncertainties about the safety of their water, the competence and honesty of the city's water management, and the repercussions for their own and their family's health. Coping with the demise of homogeneous modern water in Flint continues to involve the management of many forms of water, including bottled waters, tap water, water for brushing teeth, water for flushing, and water for cooking. The case of Flint reminds us that the water-waters dynamic is part of a wider political economic history of accumulation and infrastructure, and that heterogeneity is not always something to be celebrated.

Angela Storey's article (This Issue) calls attention to the porousness of the divisions between legality and illegality, formality and informality, public and private, and even within infrastructure itself, as

residents within the Khayelitsha area of Cape Town manage their diverse household waters – fresh water for drinking and cleaning, dirty dishwater, nightly urine, and stormwaters that periodically flood the settlement – amidst the lapses of municipal infrastructure provisioning. As she analyses taps "pulled" from the main potable water line and sand sinks used as drains, Storey invites us to see these infrastructural extensions not as illegal, informal manoeuvrings (as they are so commonly cast) but rather as condensations of creative labour and functional design that are fully anticipated – and thus implicit – within infrastructural systems and their planning regimes. A pulled tap in the gated yard of one resident, for instance, instantly dances into formality and legality when city workers declare it so after failing to repair a break in a nearby municipal water line. The sand sinks (plastic grates and drainage pits installed by households to drain wastewater) that dot the landscape in Khayelitsha are made necessary in the absence of formal drainage and sewage lines. In these ways, an infrastructural system that the city boasts as being nearly universal renders such extensions necessary; pulled taps and sand sinks thus comprise what Storey calls "implicit infrastructure". While implicit infrastructure is characterised by labour and material innovations that are full of resistant, vital possibilities, it also demarcates systemic exclusions and burdens for those who are, implicitly, charged with erecting it.

Infrastructural gaps and informality are not only problems of the poor and middle class, as we see in Lindsay Vogt's article, in this Issue, on the multivalence of water within a number-driven water management regime emerging among elite actors in Bengaluru, India. In cities such as Bengaluru and Chennai, which are global hubs for high technology, water delimits the growth and operations of the high-tech sector as conflict generated by the absence of predictable municipal water provisioning periodically prompts temporary shutdowns of tech parks and Special Economic Zones (SEZs). In this context of water scarcity and managerial urgency, measurement and enumeration become key management technologies, as we see in one set of Corporate Social Responsibility (CSR) programmes. In these examples, rather than entrenching the 'modern water' of modernist water management (a water without place or history), a small environmental consultancy group designs their enumerative instruments so as to amass heterogeneous local water stories and to place people into engagement with water and each other, even as those same instruments facilitate the efficient water use and conservation expected of modern water management. By embedding the numeric with moral grammars, adding discussions of water's diverse histories and sociocultural meanings to environmental audits, and practising enumeration as a distinctly social exercise, a small non-profit group retools inherently abstracting and reductionist enumerative techniques of commensuration so that they amplify, rather than diminish, the heterogeneity and relationality of waters.

The ethnographies and histories in this Special Issue reveal the range of waters that form as people in different places at different moments strive to make modern water. At the same time, fine-grained ethnographic and historical data makes it obvious that homogeneous water exists mostly in the blueprints of planners, the standards of managers, and the minds of consumers. Attention to the diverse materiality of waters (as well as landscapes and infrastructures) is an important starting point for our research, but we also strive to explain how this materiality is produced socially and, in particular, culturally. Rather than default to an oppositional model that poses homogeneity against heterogeneity, we show how water and waters are produced together in one modern movement.

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