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Approaching a history of water

Rila Mukherjee[1]

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Abstract This essay studies human engagement with water in all its forms by looking at transformative moments in human perception of waterscapes, most particularly regarding seas, rivers, estuaries and islands. In the process, the materiality and agency of water is emphasised and the essay looks at the ways by which waterscapes may be studied more comprehensively in the future.

Keywords Water · Sea · Delta · Estuary · River · Island

Introduction

Although not immediately apparent, water surrounds our lives. Water covers almost 70 % of the earth's surface, islands and continents make up the rest. Places located far inland are sometimes defined by water; Hyderabad in India is called the Pearl City, evoking a forgotten link with the sea. Parts of landlocked Central Asia, including Yunnan, used a marine product, *kauri* shells (*cypria moneta/onyx*) as currency for two millennia despite abundant access to gold and silver (Bin 2011a, b, 2004). Yet Peters (2010, p. 1260) notes: 'unlike the train, plane or automobile, ships and the sea occupy the edges of our consciousness; they are largely invisible and seemingly irrelevant in our everyday lives. But look around the room you are sitting in. It is likely that many of the items surrounding you would have travelled at one stage or another of their life in a ship, across the oceans'.

The relation between water and humans has been inadequately studied and water's history is yet to be attempted given that the spatiality of capitalism, along with social perception and regulation of the sea, underwent a transformation in the mid-eighteenth century. At the root of this transformation in political economy lay new opportunities for

✉ Rila Mukherjee
rila.mukherjee@gmail.com

[1] Institut de Chandernagor, University of Hyderabad, Hyderabad, India

investing in land. Earlier, during the mercantile era, the sea was central to life as bridge over which states competed for influence and use, thereby channeling the circulation of essential attributes of the era's political-economic system (Steinberg 1999). Consequently, by the seventeenth century a legal geography of ocean-space had appeared in Europe, the seas becoming sites of legal complexity and strategizing (Benton 2005, 2003; Gaynor 2007). The sixteenth-century Indian Ocean's experience was different however; the religiosity of a small nation—Portugal—anticipating through Dum Diversas the yet-to-emerge English and Dutch legal strategizing of oceans (Mukherjee 2009).

From the eighteenth century, following from new opportunities on land, the industrial era's rationalist 'development discourse' justified reification of developable places and denigrated the spaces between. The ocean became discursively constructed as an empty space, far removed from terrestrial society's progress, civilization and development. Rather than the sea being central to landed life, it became separated, new importance being placed on the terrestrial sphere and on development of pockets of land within the capitalist enterprise (Steinberg 1999, pp. 408–409). Various images of ocean space presently rule policy-making and academia: as space progressively annihilated by capital in its conquest of distance, as space of historical memory, as generating consumable icons for postindustrial society, and as space of sustainable development (Steinberg 1999, p. 416).

The process whereby vibrant, multi-leveled waterscapes mutated into empty zones in policy, enterprise and discourse and how the inherently aquatic qualities and complex histories of a coastal zone may be recovered through a history of water are issues this essay addresses. It is divided into three interlocking parts. Sections "Maritime history"–"World history" review Indian Ocean historiography and highlight transformative moments. Section "Viewing the ocean" surveys the constitution of its archive (Mukherjee 2014a, 2013a). Section "Connecting to the ocean" presents examples whereby a water history may be written—rivers and deltas, rather than seas and oceans—being focal.

Maritime history

The progenitors

The period 1950s–1990s saw historians rather than geographers writing early 'water histories'. For Braudel the sea—in this case the Mediterranean—was focal and the human—Philip II—was secondary, thereby reversing the human-sea relationship (Braudel 1949). Braudel's posthumous work (1998), a collection of early essays on the North African, European and Levantine Mediterraneans, imagined a thousand maritime frontiers, revealing the immensity and potential of water history.

Despite Braudel, histories focusing on European sea-borne empires in Asia dominated Indian Ocean studies in the last century (Boxer 1965, 1969; Scammell 1981; Parry 1961, 1966, 1971, 1974; Russell Wood 1998). These were primarily naval histories of 'Europe in the Indian Ocean', being imperial stories of contact, plunder and trade, often ending in conquest and colonization where metropolis-colony interactions rather than coastal exchanges—what Van Leur denoted as 'peddling trade', the English 'country trade' and the French 'le commerce d'Inde en Inde'—were privileged (Van Leur 1967). Little agency was ascribed to non-European merchants or shipping.

This strand of maritime history where Europe was the world was critiqued by the second generation of maritime historians such as Das Gupta who subsequently co-edited with

Pearson a volume on an expansive Indian Ocean world (Das Gupta 1967, 1979, 1994; Das Gupta and Pearson 1987). Chaudhuri (1965, 1978) moved from economic history to maritime history as he encountered this marginalisation. The shift from the limitations of company-based history to a wider canvas of interactions over a vast waterscape, taking Islam's expansion across the Indian Ocean as example, heralded a novel approach (Chaudhuri 1985; Wink 1990–2004). But man—as ruler, merchant or seafarer—remained central.

The third generation of maritime historians moved away from metro-colony links and concentrated instead on interactions between maritime polities and local economies (McPherson 1998; Pearson 2003; Alpers 2013; Mukherjee 2015a). However, the 'new' maritime history remained essentially a history of human activities on sea except in Pearson (2005, 2006). Rivers continued to be ignored.

An economic history of the oceans

Economic historians of monetary flows across oceans complemented the 'new' maritime history, global transfers and circulations of currencies becoming important in the Eurasian silver century (Kuroda 2009). Gold was rarely used. From 1400 the role of silver became even more central, Prakash arguing: 'an important element in the rise of this economy was the integration of the Indian Ocean into the larger framework of world trade on a scale unimaginable before. Not only were the three principal segments of the early modern world economy—the New World, Europe, and Asia—now drawn into the vortex of world trade but there emerged also an organic and interactive relationship across the three segments whereby the growth of trade in one direction became critically dependent on the growth of trade in the other' (Prakash 2005, pp. 5–6; Flynn and Lee 2013). While silver was the trading medium when Arab and Persian traders appeared in the Indian Ocean from the seventh-eighth centuries, copper cash dominated internal circulation in Southeast Asia. China, lacking adequate supplies of both, tried to break into the Indian Ocean trade by way of its paper currency but silver remained the currency of Indian Ocean trade until the nineteenth century (Flynn et al. 2003; Flynn 2015; von Glahn 1996). A 'lesser' currency—the *kauri* shell—bridged the gap between silver and local currencies along the Indian Ocean littoral, from Africa to China for almost two millennia (Heimann 1980). Commodity and bullion movements linked uplands with the coast thereby privileging flows of men, money and commodities over a vast space (Deyell 2010, 2011; Hussain 2013; Mukherjee 2011a, 2013b; Jahan 2006) but estuaries and deltas figured marginally in this visualisation and rivers remained overlooked.

Oceanic histories

From the 2000s, with research advancing on Indian Ocean sea-faring communities, a visible shift from human and commodity-oriented maritime histories to a more inclusive oceanic history appeared, anthropologists and historians applying various models of faith, violence and solidarity to problems of frontier societies (Matsuda 2006; D'Arcy 2006, 2013; Pearson 2003, pp. 123–126). Hinduism, Buddhism and Islam—seemingly terra-centric religions—were seen to possess oceanic facets; maritime exchanges being gleaned from various beliefs, practices and artefacts (Robinson 2001; Flecker 2002). Circulation of objects (for trade, diplomacy, as religious relics, gifts of power), beliefs (religion), peoples

and languages (Arabic, Creole, Portuguese, Malay and Chinese) were noted. Sea goddess such as the Chinese Mazu, the Indian Velankanni, the Javanese Nyayi Lara Kidul, the African Mami Wata, coastal exchanges and material practices visible in trajectories of *kauri* routes, tales, songs and rituals, literature and music were studied (Varadarajan 1980; Mukherjee 2008; Hui 2002; Younger 1992; Jordaan 1984, 1997; Wessing 1997; Kawada 1996; Drewal 2008; Hall 2010). Maritime archaeology and shipwreck studies generated new spatialities from Africa, the China seas and even the eastern Mediterranean world, being often included within 'Indian Ocean studies'. For Walcott (2007) therefore, the sea is History.

Pearson (forthcoming) warns, quoting (Steinberg 2001, p. 115):

> One way forward is to be clear about the difference between the pelagic or demersal ocean and coastal waters. It is a fault of most of the people who want to stress the sea and maritime influences that they fail to make this crucial distinction. … Steinberg writes that the sea consists of two regions. "One region, the coastal zone, is like land in that it is susceptible to being claimed, controlled, regulated, and managed by individual state-actors. In the other region, the deep sea, the only necessary (or even permissible) regulation is that which ensures that all ships will be able to travel freely across its vast surface."

This distinction is alive. In the Philippines coastal waters are manageable and friendly, while the deep sea is often considered the abode of dangerous spirits although many islanders also view the land as chaotic and the sea as peaceful (Magos 1994, pp. 321, 349, 353). These contradictory perceptions of ocean-space are echoed in the notion of 'Olympu', a deep-sea site of mysterious happenings and dangerous spirits, similar to 'Kalidaha', denoting variously a crossroads, a point of passage, a state of transition between the known and unknown and the turmoil encountered at deep sea in the Bengali *mangal kabya* genre (Mukherjee 2011a, p. 125).

Port-cities are particularly promising sites of crossings wherein studies focusing on maritime cultural landscapes, with significant inputs from archaeology and architectural history, have appeared (Mukherjee 2014b). Rivers figure in a port-oriented vision: 'Are there then two Indian Oceans, one pelagic, the other littoral or benthic? Or are there more? Does the ocean include other places: port cities; islands; the hinterlands and/or the forelands of port cities? And if so how far inland must we go before the ocean influence ends? What about estuaries?' Pearson (2011, p. 82) is already anticipating a comprehensive history of water here.

Water history

The coast now becomes prominent. The shift from oceanic history sees coastal archaeology play a determining role in uncovering water histories. Water history embraces seas, gulfs, straits and bays resulting in a cognitively larger waterscape, thereby necessitating a different perspective, including an awareness of place often not found in oceanic (Andaya and Andaya 2014). It concerns land routes and inland waterways whereby upstream downstream connectivities are forged through rivers, overland routes being seen as part of an oceanic world where far-flung, landlocked regions connect to a maritime cultural landscape (Hall 2001; van Schendel 2002; Mukherjee 2011a). Boundaries, connections, social networks among bankers and traders (commodities, finance, trust) and the state's intersecting

role (maritime governance) become prominent (Ptak and Rothermund 1991; Mukherjee 2011a, b, 2014b; Thomaz 1998; Sidebotham 2011; Boussac et al. 2012). Discerning the logic behind canals, irrigation systems, tanks and reservoirs becomes essential (Rotzer 1984; O'Connor 1995). The worldview of 'little' peoples such as boat-makers and fishermen becomes central.

An ocean of cultures

Cultural studies celebrating hybridity and cross-pollination along the Indian Ocean rim offer innovative approaches to the retrieval of cultures along the Indian Ocean (Moorthy and Jamal 2010; Vergès 2003). Cultural studies and new writing on the ocean have in recent years moved from the ethnography of fishing and boatbuilding to maritime lore and performance traditions, these having become the staple of new ways of looking at the Indian Ocean as a terrain of mnemonic traces and cultural transactions (Subramanian 2010, p. 138).

New spatialities emerge across the Indian Ocean rim whereby an

> aspect of telling Indian Ocean stories involves rethinking histories of colonialism in relation to horizontal movements between colonial outposts located within this same ocean … (such as) "webs of empire" in the Indian Ocean arena and which involves studying the circulation of goods, people, and ideologies that often bypassed imperial centers. This approach has the potential to unearth lesser known colonial narratives, experiences, and practices (Gupta 2010, p. 198).

A similar theme is the emergent cultural mix of African Indian Ocean islands such as Réunion and its neighboring islands, often disregarded by French creolists. Yet the constant impact of non francophone people (African, Malagasy, Indian) on local people yields a new history of horizontal movements (Haring 2003, p. 306; Ribeiro 2010; Ghasarian 2010; Picard 2010). Vergès (2003, pp. 242–243) proposes looking at:

> the Indian Ocean as a cultural site, construed so that its historical world of African-Asian exchanges may expand our imagination and open up possibilities for change—rather than being locked in the territorialization imposed by imperialism and post-colonial nationalism…(looking) more specifically at the corridor of exchanges that goes between southern Africa and South and East Asia via the southwestern islands … I wish here to propose an alternative spatialization of our political imagination in a period of intensive and rapid economic restructuration and cultural/political globalization. Every spatialization involves new closures. We draw new borders by proposing new spaces; we make a choice, but that choice forms an inevitable part of the process of elaborating alternative spaces that we can oppose to those imposed by states. More specifically, when China aspires to become the leader of the developing world and seeks to establish greater economic relations with the African continent, it seems important to study what social and cultural spaces will emerge from such policies, what forms of exploitation, cooperation, and hybridity will emerge, and what corridors of power and resistance can be foreseen in this south–south connection. I wish to point to the existence of an alternative spatialization rather than to review the different studies of local spatializations in the Indian Ocean, local and regional narratives of encounters and exchanges.

Vergès' vision evokes:

> The decentering of Europe and the reconstruction of African-Asian links (which) open new possibilities for the revision of former politics of solidarity, the circulation of narratives of resistance, alternative forms of hybridization, and the creation of new politics of solidarity among the urban poor, peasants, artists, and scholars. The connections between the urban poor in Bombay and Cape Town, between trade unions in Madagascar and Malaysia, between musicians in Mauritius and South Africa bespeak these emergent formations (Vergès 2003, p. 253).

She writes elsewhere (Vergès 2001, pp. 144, 146):

> It is now common knowledge that our subjective sense of the spatial relations ordering our world has undergone a historical mutation. The unprecedented speed of communication, increased and widespread urbanization, the increased mobility of people, ideas, images, technology, and capital have had an effect on the popular imaginary, causing a reworking of geographical space (material and mental). In the African continent, new maps are drawn by civil wars, genocide, the breaking of colonial borders, as well as by the construction of new regional spaces. The map of the continent, which claimed to mirror its reality, has been shattered. The fragments of the colonial map of Africa adopted by postcolonial states are now perpetually in motion, reflecting nothing reassuring. The ordered reality of Africa has been questioned. … The islands of the Indian Ocean offer a space from which postcolonial scholars might revise African and European metadiscourses.

An ocean of letters

Writers celebrating a 'littoral cosmopolitanism' are fascinated by the Indian Ocean (Moorthy 2010). Amitav Ghosh's *In an Antique Land*, *Glass Palace*, *Hungry Tide* and the three novels in the Ibis trilogy are pelagic, highlighting connections between various towns (Cairo, Madagascar, Cochin, Calcutta, Rangoon) and peoples (African, Creole, Arab, Indian, Burmese, European, and Chinese), the action often taking place on boats (*Ibis*, *Mariamma*), suggesting that people need a model of belonging beyond national frames (Chambers 2011). In his books, the reconstruction of the nineteenth century on sea powerfully demonstrates the fluid line between legal and illegal situations, the clash of civilisations and the Tower of Babel, the intermediate zone in which people from all places come together with different goals in mind (Mann and Phaf-Rheinberger 2014, p. 20).

Gurnah (2001) contrasts two different waterscapes and two forms of spatial affectiveness and belonging: the vast space of the Indian Ocean and the smaller, more restrictive space of the English Channel. Novelist Kunal Basu situates *The Opium Clerk* (2001), *The Japanese Wife* (2008) and *The Yellow Emperor's Cure* (2011) within waterscapes, vehicles of memory and desire.

World history

It is therefore natural that this century sees the Indian Ocean realm as site for world historians, world history breaking down artificial barriers imposed by area studies. Aquatic networks, connections and ties forged across water inform Alper's and Pearson's Indian Oceans *in* world history, Ray and Alper's Indian Ocean *world*, Beaujard's *worlds* of the

Indian Ocean and Chaudhuri's pioneering work on Indian Ocean *civilization* as world history (Pearson 2003; Alpers 2013; Ray and Alpers 2007; Beaujard 2012; Chaudhuri 1991, Mukherjee 2015b). Tracing the global histories and social lives of commodities across oceans are in academic fashion (Hazareesingh and Curry-Machado 2009; Riello 2009, 2013; Riello and Roy 2009; Matthee 1999; Davini 2009). World history may be a particularly promising vehicle for a history of water (projects such as the Oxford-based 'Sealinks', the British 'Coastal Frontiers' and the French 'ANR Median' are noteworthy) although Pearson sounds a cautionary note here (Pearson 2015).

As with the sense of place water history generates different levels of time; the seas seemingly ruled by an inexorable universal time and localised water bodies marching to both local and narrative time. The shift to a localised history marks a repositioning from the global to the local even as the gaze of world history prevails, the former projected from space but that of water history rooted in place. How historians reconcile these rhythms remains a matter of concern.

Viewing the ocean

With the Indian Ocean focal, we now move on to the challenges of creating an archive for water history. The very name of this ocean has privileged India. Although it washes the African coast, Africa remains largely under-represented, with the exceptions of works by—among others—Horton et al. (1996), Horton and Middleton 2001), Bang (2003), Beaujard (2012), Beaujard (2005),Campbell et al. (2007), and Gupta et al. (2010). The same is the case for Australia and the Philippines, forcing these to label this space as the 'Indo-Pacific'.

Circuits, filters and networks

Some historians have captured this mobile space, seeing the Indian Ocean as a changeable area, made up of several zones. 'Rather than looking for "essential elements" and *longues durées* in the Arabian seas, I propose to call it a constantly shifting and adaptive economic and social "network." … if one understands a "network" as a number of nodal points standing in a few relations (social, religious, and economic) to other nodal points'. Networks built on 'interlocking circuits of commerce' in the narrow seas determined a purely internal trade within a similar interlocking complex. These were circuits that ignored imperial borders, and tied the region together as a common maritime border region or maritime zone (Barendse 2000, pp. 175–176). It is evident here that the land is already yielding to sea.

One of the most influential contributions is the concept of connected, porous and mutable littoral societies connecting composite cultures across the Indian Ocean (Pearson 2006). Vink (2007, p. 53) furthers this vision, shared ecological and economic histories prompting him to visualize the spatiality of the Indian Ocean world in terms of 'the new thalassology' of the 'Greater Indian Ocean', 'Maritime Africa and Asia', 'Indian Ocean Rim' or 'Indian Ocean Africa and Asia' combining the concepts of Broeze's 'Asian Seas', 'a string of closely related regional systems stretching from East Asia … to East Africa', and Pearson's 'littoral societies' along the Indian Ocean Basin, extending into the interior with 'porous frontiers acting as filters through which the salt of the sea is gradually replaced by the silt of the land'.

Igler (2004, p. 696) proposes a novel way of looking at waterscapes from the vantage of Pacific studies, with several points of interest for historians of the Indian Ocean:

> the economic integration of the entire Pacific Basin and the emergence of something approximating a "Pacific world" relied on developments in the ocean's eastern and northern portions, which followed Cook's "discovery" voyages and the subsequent expansion of British, Spanish, Russian, and U.S. commercial ventures along the American coastline. When European and American traders met native communities in Hawai'i, Nootka Sound, or the Marquesas, and also brought international trade to Spanish ports such as San Francisco or Callao, the ramifications for trans-Pacific trade and cross-cultural interactions were tremendous. A geographic construct like the "eastern" Pacific Basin begins to cohere in light of these developments, and yet the relationships between different Pacific ports, trading nations, and indigenous populations remained fluid during this period. The eastern Pacific cohered as a region so long as an open and inclusive waterscape provided the primary connection between the disparate borderlands. The California Gold Rush and U.S. annexation of its initial Pacific territories forever altered these connections; and, by 1850, California, Oregon, and Washington had stronger commercial and new political ties to the transcontinental nation. Quite simply, much of the eastern Pacific was now the American West.

Just as American advance into the eastern Pacific helped create the Pacific world, so too did Russian advance into the western Pacific. For Ravalli (2010, pp. 27–29, 33) while Chinese and Japanese trade in furs created a north-central Pacific:

> In the end, the Western Pacific sea otter trade set in motion the Russian incorporation of territories across the northern Pacific. By helping solidify trade routes in the outer reaches of Siberia and introducing local merchants to the value of the sea otter, it established the commercial foundations by which the Russian Empire extended its reach over an ocean.

While a physical division into an eastern and western Indian Ocean is accepted, do we discern similar mobile segments, these ultimately cohering to create a composite Indian Ocean world? For Igler (2004, p. 708):

> Any comparison between the Pacific and Atlantic basins must begin with the oceans themselves. The Pacific is twice the size of the Atlantic, contains a majority of the world's populated islands, and is separated from European and U.S. markets by a tremendous distance. These geographical factors made Pacific voyages dangerous, highly speculative, and filled with "first" encounters.

How does the Indian Ocean compare with these oceans in terms of size and density of networks, and what lessons for water history may we learn from the comparison?

Mapping the ocean

Visual representations of the Indian Ocean are tools of recovering this history. While European mapping of the Indian Ocean is well-documented, non-European maps, showing radically different spatial awareness, are less known (Mukherjee 2014c). Arab maps, Javanese sea charts, the Korean Kangnido map of 1402, Zheng He's charts and Piri Reis' maps from the *Kitab i Bahriye* document Asian awareness of this fluid sailing world.

The eastern Indian Ocean remained fixed in European maps as the 'Gulf' or 'Bay of Bengal', suggesting familiarity, but the portion around Southeast Asia with its many seas and straits showed varying representations in the seventeenth century, signifying this uncharted waterscape had not yet cohered in European cartographic imagination. The western portion oscillated as 'Mare Arabicum et Indicum', 'Sea of Persia', Sea of Oman and the 'Arabian Sea', since the idea of a single Indian Ocean basin had not emerged until the nineteenth century. Accordingly, despite European advances in cartography and colonization, the *cartographic* category of the 'Indian' Ocean was slow to capture the imagination, the 'Indian Sea' finally becoming the 'Indian Ocean' only in the nineteenth century. The ocean as appendage of land, in this case colonial India, happened almost a half-century after English conquest of Bengal and the beginnings of empire in India. The non-convergence of spatial and written narratives demonstrates the diversity and richness of spatial imagination; a fact often ignored in maritime histories. Maps therefore may be a device to recover a history of a single Indian Ocean world (Mukherjee 2014c, 2013a, pp. 223–224, 226–229, 234).

Connecting to the ocean

A water history differs from maritime and oceanic histories, seeing waterscapes as complex units embracing estuaries, deltas, rivers and seas (Jones, forthcoming; Zayas, forthcoming). This history includes marts and villages along riverbanks, as well as port-towns where littoral and sea connect. The delta is a world by itself, tracing its connectivities being a method of retrieval of its rich history.

Navigation and connectivities

The Bengal delta is focal. With 130 million plus inhabitants, the Ganges delta has a density of more than 200 people per km, making it one of the most densely populated regions in the world. Upwards of 300 million people are supported by it, and approximately 400 million people live in the Ganges River Basin, making it the most populous river basin in the world. The total population of Bangladesh is 160 million (73 % rural) of which 122 million inhabitants live inside the GBM (Ganges–Brahmaputra–Meghna) river basin. The total territory of India has a population estimated at 1181 million inhabitants (71 % live in rural areas), of which 476 million inhabitants live inside the GBM river basin

> That part of the Delta bordering on the sea, is composed of a labyrinth of rivers and creeks, all of which are salt, except those that immediately communicate with the principal arm of the Ganges. This trait, known by the name of the Woods, or Sunderbunds, is in extent equal to the principality of Wales; and is so completely enveloped in woods, and infested with Tygers, that if any attempts have ever been made to clear it (as is reported) they have hitherto miscarried. Its numerous canals are so disposed as to form a compleat inland navigation throughout and across the lower part of the Delta, without either the delay of going round the head of it, or the hazard of putting to sea' (Rennell and Banks 1781, p. 92).

Cartographer James Rennell commented on sailing in the innumerable rivers around Dhaka in 1765:

> January 1st. 1765, at 3 p.m. arrived at Backergunge, which lies on a very small Creek about 14 miles below the four Creeks. It lies in Latitude 22°-36'…North, about 16 miles from the Great Ganges, 74 from Dacca & 116 from Calcutta. The Inhabitants report that the Sea is about 20 miles to the SSE (La Touche 1910, p. 32).

Another description comes from Robert Lindsay, on his way to Dhaka and subsequently to Srihatta (Sylhet in Bangladesh), in September 1772:

> I left Calcutta on my way to Dacca by water; we embarked at Balaghaut on the salt-water lake three miles to the eastward, and in a few hours found ourselves in the Sunderbunds, completely secluded from the world in a wilderness of wood and water. This navigation is part of the Delta of the Ganges, extending more than 200 miles along the coast, through thick forests, inhabited only by tigers, alligators, and wild animals peculiar to a tropical climate; the human population is very scanty, the country being overflowed every spring-tide by salt water. It is a dreary waste of great extent, but beautiful in the extreme, the lofty trees growing down to the water's edge with little or no brush or underwood. The innumerable rivers and creeks which intersect this country in every direction form a passage so intricate as to require the assistance of a pilot; its windings are like the mazes of a labyrinth, in which a stranger would find himself immediately bewildered. In 12 days I found myself domiciled at Dacca, and the situation, I found, in every respect suited my genius… (Lindsay 1840, pp. 16–17).

Also going upstream, Bradley-Birt (1906, p. 5) wrote of the intricate fluvial network of this natural world, commending the excellent circulations to be effected therein:

> It is a scene full of life and interest, as one passes up the great rivers on one of the many steamers that run through the heart of eastern Bengal, linking the first city of India with the furthermost limits of empire towards the East. There is no easier mode of traveling in all India than this.

Downstream passages were often dangerous. In 1782-3 Lindsay's *Augusta* sailed towards Kolkata on its way to Macau, delineating the gradual progression of this waterscape from river to estuary to sea:

> Through a most intricate and hitherto unexplored navigation, to the vicinity of the sea. On the passage down, the ship frequently grounded, but, being furnished with good anchor boats, we hove her off without difficulty. My troubles I thought now at an end, having anchored at a place called Luckypore, near to the confluence of the Ganges and Brahmaputra, two of the largest rivers in the world. … Next morning, (we) embarked in a good sailing boat, and crossed and recrossed this great river, at this place full twenty miles broad, and, after sounding the channel with every attention, nowhere could we find more than fourteen feet water, the Augusta with her water and stores, drawing full seventeen! I leave you, my friends, to judge, in what an awkward situation I was placed,—my ship and cargo, value at the least £40,000, hermetically sealed up in fresh water, without the prospect of ever reaching the ocean. The ridicule I had to encounter for a few hours vexed me—but the question now was, how to get out of the scrape. Two row-boats well manned were now ordered; Captain Thomas embarked in the one, and I took charge of the other. Our object was to abandon the large rivers as impracticable, and to search for a passage to sea through the narrow channels, or creeks, with which this wide delta abounds; and we succeeded in finding deeper water in the river called Harringotta, a smaller

> branch of the Ganges. … The ship was destined to the Straits of Malacca, with a valuable cargo of opium, and eventually to stop at Macao in China; … It was now the beginning of December, and the most favourable season for getting clear of this dismal and dangerous navigation, the water as smooth as a mill-pond,—and well it so happened, for we had still to cross a bar of ten leagues extent, on which there was not more than six inches more water than the vessel drew; but, as I had previously sounded, and the wind was fair, I recommended the captain to hoist every sail he could set, and thus we forced the ship through black mud till the captain pronounced us in perfect safety' (Lindsay 1840, pp. 82–84).

Rivers provided inland navigation, Rennell noting:

> The Ganges and Burrampooter Rivers, together with their numerous branches and adjuncts, intersect the country of Bengal in such a variety of directions, as to form the most compleat and easy inland navigation that can be conceived'…. It is supposed, that this inland navigation gives constant employment to 30,000 boatmen. Nor will it be wondered at, when, it is known, that all the salt, and a large proportion of the food consumed by ten millions of people are conveyed by water within the kingdom of Bengal and its dependencies. To these must be added the transport of the commercial exports and imports, probably to the amount of two millions sterling per annum; the interchange of manufactures and products throughout the whole country; the fisheries; and the article of traveling' (Rennell and Banks 1781, pp. 87–88).

In colonial Malaya and White Sarawak the river provided the vital connectivity between 'civilization' and frontier outposts in the interior, Keith's memoirs from Sandakan in Borneo underscoring the necessity of constant travel by waterways for British officials in Sarawak (Keith 1939). Longhouses operated as nodes along riverways:

> You paddled away, making use of the tides, until you got to your first Dayak longhouse, which would always be on the bank of the river…Then you…travel further up-river…to the next longhouse—until eventually you got right up to the headwaters in the hills…Finally, when you reached your last longhouse you'd cut back downriver (Allen 1984, p. 154).

Recovering old connectivities in this marine landscape was therefore necessary. Lindsay (1840, p. 35) noted that the distance between Calcutta and Sylhet was some 325 miles by 'the windings of the river' and in 1774–1775 he:

> Bade adieu to Dacca, where I had lived for upwards of 2 years with much comfort and satisfaction.—Proceeding down the river for twenty miles, we stopped at Feringee-bazar; at this place the Dacca river, which is a branch of the Ganges, joins the great Brahmaputra; when both united, they are known by the name of Meghna, and form one of the largest rivers in the world. This river I had now to ascend for many miles, but, as the periodical rains had set in, the whole country exhibited a most melancholy and desolate appearance, being involved in a general deluge. This sudden rise of water is not occasioned by the rains that fall in the adjoining country, but by the melting of the snow and ice early in the summer in the Himalaya and other lofty mountains in Tartary, in Assam, Thibet, &c., all of which furnish their tributary streams, and assist in overflowing the lower provinces of Bengal in their rapid course to the ocean; laying the whole country for 3 months of the year under water, and, similar to the Nile, fertilising the land for the ensuing crops (Lindsay 1840, pp. 25–26).

Settled in Sylhet, Lindsay noted of its borders:

> On the east side of the Brahmaputra river lies the province of Sylhet. It is of considerable extent, reaching from the east bank of that large river, and extending to the high range of mountains which separates our territories of Bengal from the dominions tributary to China; according to Major Rennell's account, the Chinese frontier is only distant three hundred miles from ours; the intermediate space is but thinly inhabited, and occupied by tribes of independent Tartars (Lindsay 1840, p. 21).

This hilly region saw Lindsay's ship being built during the monsoon of 1782–1783:

> (I was) actively employed in building a ship, double the size of any I had hitherto constructed. She was a beautiful vessel, called the Augusta, four hundred tons burden, pierced for eighteen guns. She was the phenomenon of the mountains, and the Cusseahs came from great distances to see her—to them, no doubt, a wonderful sight—the first, and without doubt, the last of the same magnitude ever built in that part of the world….I have since that period puzzled many a nautical man with my story of building a ship of 400 tons burden, 300 miles from the sea, at least 50 miles from water to float her—and all perfectly true; the periodical rains cleared up the mystery (Lindsay 1840, pp. 81–82).

Time in the delta

Reminiscences on the Bengal delta resonate with the course of rivers and the ebb and flow of tides. It is noteworthy that as early as the sixth century CE, in the struggle between the Maukharis and the Gaudas, the latter, the proto-Bengalis, were called *samudra-asraya*, i.e., those sheltered by the sea (Sircar 1990, p. 124). Within this estuarine landscape are found bores as well as storms, cyclones and 'toufans', the last being the local Bengali term for typhoon; rivers often being 'storm-tossed like a sea in miniature' (Bradley-Birt 1906, p. 6). Here is a description by Frederici of a 'typhoon' in the northern Bay of Bengal in 1569:

> I went a boord of the ship of Bengala, at which time it was the yeere of Touffon: concerning which Touffon you are to understand, that in the East Indies oftentimes, there are not stormes as in other Countries; but every ten or twelve yeeres there are such tempests and stormes, that it is a thing incredible, but to those that have seene it, neither doe they know certainly what yeere they will come. Unfortunate are they that are at Sea in that yeere and time of the Touffon, because few there are that escape that danger. In this yeere it was our chance to bee at Sea with the like storme… This Touffon or cruel storme endured three dayes and three nights: in which time it carried, away our sayles, yards, and rudder; and because the ship laboured in the Sea, wee cut our Mast over-boord: which when we had done, shee laboured a great deale more then before, in such wise, that she was almost full with water that came over the highest part of her and so went downe: and for the space of three dayes and three nights, sixtie men did nothing but bale water out of her in this wise, twentie men in one place, and twentie men in another place, and twentie in a third place… And as it pleased the Divine power, there came a great wave of the Sea, which drave us beyond the shold. And when wee felt the ship afloat, we rose up as men revived, because the Sea was calme and smooth water, and then sounding we found twelve fathom water, and within a while after wee had but sixe fathom, and then presently wee came to anker with a small anker that was left us at the sterne, for all our other

were lost in the storme: and by and by the ship strooke a ground, and then wee did prop her that shee should not overthrow. When it was day the ship was all drie, and wee found her a good mile from the Sea on drie land (Fedrici Cesar of Venice 2004, pp. 152–153).

Memory and time

While these passages portrayed rivers as economic power and employment generating force, as transport highway and even as destructive element, the following description of the Lakhiya in Bangladesh highlights the centrality of rivers to life itself:

> Memories still cling thick around these lower reaches of the Lakhiya, close by where the great rivers meet. But just below, the Megna, the Ganges, the Brahmaputra, the Dullasery, and the Ishamutty, all unite, and this meeting-place of the giant water-courses is the most historic spot in all Eastern Bengal. The many tides that have ebbed and flowed this way have seen strange scenes. … It has seen great principalities and kingdoms rise and fall, the fleeting glories of a fickle world. On its broad bosom it has borne brave fleets and armies to victory and defeat…. Only the great river…flows onwards… (Bradley-Birt 1906, pp. 319, 325).

Contrast these passages with Conrad (1899) who was one of the earliest to project rivers as primordial memory. In the *Heart of Darkness* Conrad's Marlow says of the Zaire or Congo River that flows into the southern Atlantic Ocean:

> Going up that river was like traveling back to the earliest beginnings of the world, when vegetation rioted on the earth and the big trees were kings. An empty stream, a great silence, an impenetrable forest. The air was warm, thick, heavy, sluggish. There was no joy in the brilliance of sunshine. The long stretches of the waterway ran on, deserted, into the gloom of overshadowed distances. On silvery sandbanks hippos and alligators sunned themselves side by side. The broadening waters flowed through a mob of wooded islands; you lost your way on that river as you would in a desert, and butted all day long against shoals, trying to find the channel, till you thought yourself bewitched and cut off for ever from everything you had known once—somewhere—far away—in another existence perhaps. There were moments when one's past came back to one, as it will sometimes when you have not a moment to spare to yourself; but it came in the shape of an unrestful and noisy dream, remembered with wonder amongst the overwhelming realities of this strange world of plants, and water, and silence. And this stillness of life did not in the least resemble a peace. It was the stillness of an implacable force brooding over an inscrutable intention. It looked at you with a vengeful aspect. I got used to it afterwards; I did not see it any more; I had no time. I had to keep guessing at the channel; I had to discern, mostly by inspiration, the signs of hidden banks; I watched for sunken stones; I was learning to clap my teeth smartly before my heart flew out, when I shaved by a fluke some infernal sly old snag that would have ripped the life out of the tin-pot steamboat and drowned all the pilgrims; I had to keep a look-out for the signs of dead wood we could cut up in the night for next day's steaming. When you have to attend to things of that sort, to the mere incidents of the surface, the reality—the reality, I tell you—fades.'

The river is also an allegory of Time. Again Marlow in *Darkness*:

> The brown current ran swiftly out of the heart of darkness, bearing us down towards the sea with twice the speed of our upward progress; and Kurtz's life was running swiftly too, ebbing, ebbing out of his heart into the sea of inexorable time.

Rivers as commons

Rivers in Asia are an indispensable part of commons. The sacred land of Pundravardhanapura in present Bogra district, Bangladesh, later known as Mahasthan, was deemed twice blessed because the river Karatoya washed it. The *Karatoya Mahatmyan*, composed sometime prior to the second half of the twelfth century, states that its men were wise and pure and the land was elevated, fertile and snake-free, being filled with tanks, wells, gold, dancing and enjoyment (Chandra 1929, pp. 20–21, 25–28). Here the river defines the land, and not the opposite, local perception determining the 'landscape' and scope of water history. In Uttarkashi and Varanasi, as in countless other places on the Indian sub-continent, the *sandhya arati* of the evening Puja ceremony venerates the life-giving force of the Ganga, celebrating its healing properties and its involvement with peoples' lives on its journey to the sea, an example being the Ganga Sagar (*sagar*, Sanskrit, referring to the Bay of Bengal) pilgrimage in Bengal. The notion of the river sea continues to influence peoples' lives along the northern Bay of Bengal. From the earliest recorded history, peoples around the northern Bay have called the Brahmaputra River 'Lauhitya Sagar', literally, the river-sea, Lohit being another name for the Brahmaputra.

Along the Indian Ocean rim—in Africa and Asia, for example—peoples' perception of the sea as an intrinsic part of land, and its use as commons, remains despite attempts to regulate this space. The *harang* ritual in the Visayas consists of a set of sea, seashore, reef, cliff, island and land as signifiers of the worldview of fishermen (Kawada 1996, pp. 225–226). The *kujira uta* whose lyrics outline Edo period whaling practices in terms of geography, personnel, techniques species and attitudes, demonstrate a worshipful approach toward whaling, rather than an event-based narrative as in Western shanties (Greenland Felicity 2013, p. 65). In parts of Palawan a shared subsistence fishing economy continues despite the intrusion of a cash economy (Magos 1994).

The harmony of river and sea finds a resonance in other cultures; the people of the Amazon call the river 'rio-mar'—River Sea—similar to the Graeco-Roman vision whereby a flowing stream—the Ocean River—coursed around the Afro-Eurasian landmass, the Nile being the River Oceanus (Raffles 2007, p. 315; Lewis 1999, p. 190). The postindustrial notion of this space therefore contrasts sharply with peoples' perception and quotidian use of water resources.

Conclusion

This essay interrogated oceanic, riverine, deltaic and estuarine histories to emphasize their connectedness in writing a water history. Having for its terms of reference a post-colonial space where a limited capitalism was imposed through imperialism, we began with the notion of progressive diminution of marine space and its significance in India, arguing that colonialism had reduced water to an appendage of Empire. This reduction was coupled with the powerful imaginary of imperial history, linking our experience to western capitalist concerns. Water as a living universe seemed to have disappeared from

consciousness. But as we progressed we saw that this view is flawed; people can have very different perceptions of water.

The birth of modern capitalism saw rivers and seas as distinct categories, much as the European Renaissance had separated seas and oceans prior to the 'discoveries' (Lewis 1999). Yet rivers, focal to this essay, were largely spared in Asia, continuing as an active presence in human lives. Being largely resistant to colonial and post-colonial projects of regulation despite costly colonial expeditions to determine the headwaters of the Tsang-po or the Mekong, rivers' importance as transport highway continued even when railways appeared in India.

In China, as late as in 1921, numerous timber rafts and salt junks circulated on the Yangtzi, similar to Rennell's description of life on the Ganga and Brahmaputra rivers some 150 years earlier:

> On the Lower River you'd get quite a lot of traffic, not much on the Middle River and even less on the Upper River, where you would only meet the odd steamer coming down and the junks…going up (Allen 1984, pp. 194–195).

Seas too avoided regulation to an extent. An ordinary steamer linked various coastal settlements in Borneo, buying and selling goods, carrying essential supplies and sometimes mail less than a 100 years ago:

> The ships would have a week in Singapore and then be 3 weeks away, calling at various ports…Miri, Labuan, Jesselton, Kudat, Sandakan and on to Tawau. The scenery from Jesselton round to Tawau was very beautiful…The channel was narrow and it was as though you were sailing on a multi-coloured sea, ranging from deep blue to green…with the islands set like jewels here and there. At the approaches to Sandakan there was an island called Berhala…The cliffs were red in colour' (Allen 1984, p. 185).

Although colonialism much reduced its circuits Jesselton, now Kota Kinabalu in Malaysian Borneo, shows a long tradition of sea faring. The Sabah Museum showcases porcelain shards from Tang to Qing found at neighbouring sites, evidence of an unbroken maritime link with China (field visit 2014).

The sea continues as conscious presence, feared and appeased through numerous folk practices along the Asian coastline. Also, despite it being claimed by capital *pace* 121, rivers—more susceptible to control—largely escaped regulation. The enduring perception of water as living force and peoples' participation in waterbodies continues. Contrary to Steinberg's assertion both capitalist and pre-capitalist notions of waterscapes continue to co-exist. How we grasp water's complex history and thereby reveal the immensity and potential of this vast space depends on our commitment as researchers.

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