Article Abstract: Energy, Justice, Colonialism

The praxis of justice is obviously central to any meaningful realization of post-colonialism and post-capitalism. Without it there can be no transition out of colonialism and capitalism – "No justice, no peace" as the slogan on the Israeli occupation of Palestine has it. But all too often, such a praxis is the very reason for the failure to achieve this transition because it remains confined within the limits of the classical 'distributive model' of justice. While distributional issues are crucial, the latter cannot be reduced to them since maldistribution of justice is finally determined by socio-historical processes of domination, resistance and recognition. Any praxis of justice must attend to these before they can activate transition into a world without colonialism and capitalism.

One such trigger for such a reconfigured praxis in our times has been the movement for energy justice. Ranging from the examination of racial and ethnic dimensions of toxic hazards and 'natural' disasters, to structural analyses of colonialism and neo-colonialism, this movement compels our simultaneous recognition of the historicity of environment and the environment of history. Furthermore, the recognition that energy - and in particular fossil fuels - have shaped our everyday lives in ways 'that we have never fully understood', now raise the possibility of cross-fertilizing the praxis of justice with an 'energy unconscious'. Such new forms of energy justice might finally put to rest the paradigmatic presence of the 'distributive model'.

But how new really are concepts such as 'energy unconscious' and 'non-distributive justice'? In this paper, I trace a literary genealogy to suggest that they have long been present in the popular anticolonial-, and perhaps more surprisingly, in colonial imaginaries. I look at Rudyard Kipling's 'The Bridge Builders' (1898); Dinabandhu Mitra's Neel Darpan (1858) and Rokeya Sakhawat Hossain's Sultana's Dream (1905). Across the variety of forms (play, short story etc) genres (science fiction, imperial adventure), these texts test out the relationship between energy, justice, colonialism and capitalism as well as the limits and possibilities of transitions from their current configurations.

Upamanyu Pablo Mukherjee

Warwick University

1.Justice in the Colonies

Let me begin to by invoking three different calls for justice from three literary classics of the high imperial era in South Asia. In the closing moments of the first act of Dinabandhu Mitra's play Neel-Darpan, Sabitri - wife of the prosperous farmer Goluk Basu – complains about the English planters encroaching on their land and lives:

The Indigo Planters can do anything. Then why do I hear it generally said, that the sahebs are strict in dispensing justice? Again, my son Bindu Madhab speaks much in praise of them. Therefore, I think that these are not sahebs; no, they are the dregs (chandál) of sahebs. (1861, 55).

There are some striking things about Sabitri's lament, not least how Mitra codes imperial failure to dispense justice as an affirmation of Brahminical caste hierarchy – the offending Englishmen can only be imagined as lower-, or more precisely, out-caste Indians (chandáls). Note also how justice appears as the hegemonic device par excellence of modern imperialism - it is generally thought of as an attribute of British governance (and particularly so by the aspirational men of the Basu family). But perhaps less visible here is the relationship between the kind of work that these English 'dregs' do (the aggressive building of a gigantic agri-business empire), and the injustices that Mitra's incendiary play documents.

Think then of another moment towards the end of Rudyard Kipling's 1898 short story, 'The Bridge Builders'. As he anxiously waits to find out whether his bridge can survive an unexpected flood, the English engineer Findlayson stumbles into the court proceedings of Hindu pantheon in an opium-stimulated dream. Here, the river Ganges appears as a petitioner – 'They have made it too strong for me. In all this night I have only torn away a handful of planks. The walls stand! The towers stand! They have chained my flood, and my river is not free

anymore [….] It is I, Mother Gunga, that speaks. The justice of the Gods! Deal me the justice of the Gods!' (1987, 24). Like Mitra's play, there are a number of striking aspects of this passage - not least of which is the different manner in which justice (or the lack of it) appears here in comparison to that earlier text. In Kipling's tale, it is the construction of a railway-bridge – an icon of Victorian modernity - that is initially misunderstood as a grave injustice by a 'backward' India embodied in its riverine goddess. Yet, in the celestial court's later dismissal of the river's petition we return to the hegemonic supremacy of imperial justice acknowledged even by the Hindu gods - particularly those who are patronized by the 'fat money-lenders' and their 'account-books' (1987, 26). The typically complex irony deployed by Kipling – justice is here literally the pipe dream of a sick Englishman – undermines much of what is conventionally read as an allegory of the white man's burden. Once again, though, what tends to pass unnoticed is how Ganges's petition dramatizes a clash between different kinds of energy regimes – the aquatic flow of the river bound by a bridge which is conduit of the fossilized energy of coal driving the railways.

Finally, in a pivotal moment of Rokeya Sakhawat Hossain's 1905 story, Sultana's Dream – often described as one of the earliest instances of Indian (utopic) science fiction – an army of women march into a last-ditch, desperate battle against an overwhelmingly powerful enemy to save their country from annihilation. Nobody gives them much of a chance but unbeknownst to most, the women - scholars specializing in experimental and applied sciences - have devised a way to collect, conserve and weaponize solar energy. The battle, in fact, turns out to be a rout: The heat and the light were too much for them to bear. They all ran away panic-stricken, not knowing in their bewilderment how to counteract that scorching heat. When they fled away leaving their guns and other ammunitions of war […] no one has tried to invade our country anymore. (Hossain 2005, 10-11).

Not only does Hossain's feminist utopia require the execution of a bellum iustum, but such a 'just war' only becomes possible with the use of a particular kind of energy. More than this, as we

learn soon, the use of this energy is conditional on opening up the existing praxis of justice to radical change. The warrior-scientists will try their weapon only if all the adult men in their country confine themselves voluntarily to domestic seclusion of the zenana. Militarily and politically demoralised, the men agree, certain that the women's 'sentimental nightmare' of an experiment would fail. However, after witnessing its startling success, they petition for their freedom on the seemingly reasonable grounds that they had ceded their rights for the duration of the emergency and not beyond that. But their bid for freedom is refused by the queen. As with Kipling's tale, what seems to be a failure of justice turns out to be, in fact, the starting point for practice with a greater claim to its name:

'But how do you manage,' I asked Sister Sara, 'to do without the police or magistrates in case of theft and murder?' 'Since the "Mardana" system has been established there has been no more crime or sin; therefore we do not require a policeman to find out a culprit, nor do we want a magistrate to try a criminal case. (Hossain 2005, 11).

It is the simultaneous solarisation of war, justice and law that leads to the transition out of (colonial) patriarchy into utopic state and society in Hossain's story.

In what follows, I will offer some preliminary speculations about the relationship between kinds of justice and forms of energy which is, in fact, pretty widely represented in colonial/imperial and post-colonial writing. I will offer some reasons for the relatively recent critical and academic engagement with this. I will try and outline what both post-colonial theory and what has recently been called 'energy humanities' stand to gain from such an engagement.

## 2. Justice: Environment and Energy

Writing in the wake of the invasion of Iraq by U.S.-led forces, Neil Lazarus and Priyamvada Gopal pointed out in 2006 the paradox this cataclysm posed to postcolonial studies:

What we are proposing is that, 'after Iraq', postcolonial studies must change not because the world has changed but because 'Iraq' shows that, in quite substantial ways, it has not changed.

This sounds paradoxical, of course. Why should postcolonial studies have to change if, and indeed because, the world has not changed? The answer to this question is that up until now, postcolonial studies, in its predominant aspect, at least, has demonstrated a notable disregard of what Kanishka Goonewardena and Stefan Kipfer, in their contribution to this issue, call 'the contemporaneity of imperialism, colonialism and capitalism', that is, of the deep structural dimensions of the world system. (2006, 7)

Gopal's and Lazarus's use of 'Iraq' as a conjuncture in the Gramscian sense seems to me to be entirely appropriate insofar it introduces a relatively new element to post-colonial studies attempts to grapple with the 'structural dimensions' of the modern world – energy. This, in turn, allows us to reorient our discussions of the more familiar preoccupations of the field such as justice. So, to talk of Iraq is to talk of oil – the fossil fuel per excellence of (late) modernity - and of (in) justice together to the extent that conversations regarding one can only be held in relation to the other . The myriad slogans and banners raised in the famous 'million people march' in London on February 15, 2003 (which remains the largest ever political demonstration in Britain) against the invasion of Iraq quite explicitly linked the appropriation of oil to a corresponding lack or scarcity of justice in the contemporary global imperial dispensation. But using this 'common sense' to build theoretical, conceptual or analytical tools has proved to be no easy task. What kinds of justices do the various energy forms demand? Conversely, do all kinds of energies give rise to ideas and practices of justice? Are access and affordability of energy adequate frameworks for thinking about justice? Such questions have entered academic theoretical debates relatively recently. If Heffron and MacCauley (2017) are correct in their extensive survey, 'energy justice' first appeared as a term in research literature in 2010 and it was not before 2013 that it began to receive serious consideration (2017, 659).

This lag between a popular consciousness about the relationship between 'energy' and 'justice' may in fact speak of a general difficulty about understanding what energy means. The scalar difference as well as the relationships between specific kinds of energy, larger

energy-systems, and longue durée historical epochs, lie precisely at the heart of what Allen MacDuffie calls the 'material and representational' dimensions of the current 'energy problem' (2014,2). For MacDuffie, our propensity to confuse energy both as a 'usable resource' and as 'an ambient agency circulating endlessly through the world' originates in the nineteenth century, and in particular, in the thinking of Robert Malthus - whose idea of a closed system of a 'single, inescapable world-environment' MacDuffie sees one of the most influential concepts of the past two centuries (2014, 3-5).

The recent, inter-disciplinary growth of energy humanities may be understood in part as an attempt to turn such a confusion into a conceptually productive discussion. With all the usual caveats regarding simplification, let me point out the three main interventions made by the scholars working in this field. First, energy humanities has adopted and deepened Braudel's great insight about modernity's longue durée by using various forms of overlapping, inter-locking and contradictory energy-regimes, in conjunction with various kinds of capital, as periodizing devices. As Szeman and Boyer put it in their foundational anthology:

The way one establishes epochs or defines historical periods inevitably shapes how one imagines the direction the future will take. And so it is with the dominant periodization of the history of capital, which has been organized primarily around moments of hegemonic economic imperium [….] What if we were to think of the history of capital not exclusively in geo-political terms, but in terms of the forms of energy available to it at any given moment? (Szeman 2017c, 55-6).

Second, energy humanities has restored the question of work to the heart of any analyses of modern culture. Consider the very definition of 'world-ecology' as proposed by Jason Moore – 'the fundamental co-production of earth-moving, idea-making, and power-creating across the geographical layer of human experience' (2015,P?). It is impossible to propose this without taking into account the role played by energy expended on work - 'work/energy helps us to rethink capitalism as a set of relations through which the "capacity to do work" – by humans and

non-humans alike – is transformed into value, understood as socially necessary labor time' (2015,14).

Third, energy humanities proposes an expansive understanding of social power. Andreas Malm notes that while 'the semantic confluence in the anglophone world, thermodynamic and social power are nearly always treated as distinct phenomena', in reality:

No piece of coal or drop of oil has yet turned itself into fuel, and no humans have yet engaged in systematic large-scale extraction of either to satisfy subsistence needs: fossil fuels necessitate waged or forced labour – the power of some to direct the labour of others – as conditions of their very existence. (2016, 19).

This account of power turns conventional accounts of the history of industrialization on its head - instead of pioneering heroes inventing revolutionary technology we see how an unequal distribution of power can organise and compel collective work. As Malm's study of the British cotton industry shows, the switch from water- to steam-power (or from 'flow' to 'stock' in Malm's vocabulary) happened not because there was a sudden scarcity of water in Britain, but because the process of steam driven manufacturing allowed British capitalists as a class to wield power more effectively over their workers – 'Capital prevailed over labour in the key industry of the British economy - smashed the unions, reestablished proper hierarchy, extracted more output out of fewer workers at lower cost - by means of power, in the dual sense of the word. (2016, 68)

It is with this last intervention of energy humanities – into the question of power – that concepts of justice obviously open themselves up to critical re-assessments. As Neera Jain suggests, struggles for environmental justice in general do not only involve integrating models of 'distributional, procedural and recognition justice', but are also about 'ways of knowing, being and valuing' – that is epistemological, ontological and cognitive justices (2019, 139). Energy justice takes root in soil turned over by the environmental justice movement, but also seeks to open fresh channels in it. A key difference between the two is that energy justice tries to frame itself in relation to both the producers and consumers of commodities in the modern world –

"An energy-just world would be one that promotes happiness, welfare, freedom, equity, and due process for both producers and consumers. It would distribute the environmental and social hazards associated with energy production and use without discrimination" (Sovacool and Dworkin 2015, 437). On the one hand, such attempts try to locate ideas of justice at the intersection of the social relationships brought about by production and consumption. On the other, in assuming a more or less symmetrical relation between producers and consumers, they ignore the actually existing unevenness inherent in it. Nonetheless, such enmeshing of the principles of procedure, distribution and recognition allows energy-justice scholars to shift the problem of efficiency from economic to ethical terms, such as virtue (Sovacool and Dowrkin 2015, 438). Everything from human rights abuses to faulty environmental impact assessment and energy poverty are rejected on deontological grounds rather than because of their possible consequences (Sovacool and Dworkin 2015, 438).

Another difference between energy- and environmental- justice is the latter's attempts to break free of what may be called the 'proximity bias' of the former. The classic environmental justice movement builds upward and outward from the local and regional levels, to those of the national or international. In contrast, by taking vulnerability and capacity as its guiding frames 'energy justice' tries to move in the reverse direction, from the national and international, to the local and regional levels, in a systemic and relational manner (McCauley and Heffron 2018, 3-4).

A third distinction between the two lies in the way in which historical breaks and transitions are accorded centrality by energy justice scholars in thinking about the problems of temporality. This attention to the disjunctive relationality, rather than smooth continuity, between historical periods have accorded centrality to restorative justice whose the primary aim is to 'repair the harm' done to an individual or to communities, rather than punishing the perpetrators of past harms and to identifying where and when prevention of these harms needs to occur (McCauley and Heffron 2018, 5).

This detour among the circuits of energy justice seems to suggest that postcolonial studies and energy humanities are bound by certain elective affinities that orient them towards excavating a 'history of the present' as Gopal and Lazarus put it in their 2006 call. Indeed, it is precisely the question of 'justice' that provides one of the strongest binding agents between enquiries about (post-) colonialisms/imperialisms and energy regimes. This is confirmed by many historical studies, such as the recent magisterial one of British South Asia by Sumit Sarkar, where every dimension of imperial life – economic, social, cultural, social – has the questions of (in) justice and energy braided through it. For instance, the landmark Forest Acts of 1865 and 1878 were explicitly designed to cut off whole swathes of non-sedentary or semi-settled rural Indians from any access to livelihood and justice. These legal measures turned Indian forests into zones of commercial monoculture de-legitimized entire ways of life at the stroke of a pen – collecting wood for fuel, grazing and slash-and-burn agriculture suddenly became criminal activities (2014, 84). Sarkar's findings further confirm the work of generations of scholars who have addressed the fundamental and necessary question of (in) justice as a determining or structural principle of modern imperialism. The texts I opened my remarks with, Neel Darpan 'Bridge-Builders' , and Sultana's Dream are familiar to those affiliated with post-colonial studies. But reading them together as specific registrations of imperial energy regimes may allow us to approach the question of justice in new, defamiliarized, manner. Such will be my concluding suggestion here.

3. Water, Steam, Sun

Clearly, we can gather two of the three texts – Mitra's and Kipling's - under the rubric of what Tabish Khair has called 'Babu fiction' (2001). That is, they dramatize the affinities and competitions across racial lines between men who are simultaneously privileged and dominated as 'gentlemen' (babus in Bengali), and who put forth their claims to be what Tithi Bhattacharya has felicitously called 'sentinels of Culture' (2005). Hossain's tale, on the other hand, while sharing some of the developmental imaginaries of 'babu fiction' is equally clearly interested in

de-centring the aforementioned babu from his habitual position of privilege at the centre of the narrative. What is crucial for us here is that for all three writers, hegemonic claims can only be made through the twinned language of justice and energy.

Ranajit Guha shrewdly notes that at the time of Neel Darpan's publication, Mitra was 'one of those young men [….] who managed to have some bad prose and worse verse in Sambad Prabhakar between 1853 and 1856'; that the play itself received indifferent critical reception; that the topic was hardly a revelation; and yet, a luminary like Sibnath Shastri could pronounce that Mitra's play had spoken for their generation (1974, 1-2). Guha's explanation is that it is only when the Indigo planters decided to sue it for libel, that the literati of Calcutta (both Indian and European) decided to rally behind the play, and in the process, turned the text into a pre-text—for the fabrication of a nice little middle-class myth about a liberal Government, a kind-hearted Christian priest, a great but impoverished poet and a rich intellectual who was also a pillar of society—a veritable league of Power and Piety and Poetry— standing up in defence of the poor ryot. Coming when it did, this myth did more than all else to comfort a bhadralok ('gentlemanly') conscience unable to reconcile a borrowed ideal of liberty with a sense of its own helplessness and cowardice in the face of a peasant revolt. (1974, 3).

The play's bhadralok credentials are paraded in a series of prefatory remarks before the action proper begins. The real risk of reducing the Bengali ryot ('a peasant proprietor') to the condition of a 'serf', we hear, is that it dooms to failure imperial efforts to 'develop the resources of India' (Mitra 1861,10). Queen Victoria is imagined as 'the mother of the people' who has 'now taken them on her own lap to nourish them' and despatched many 'great men' who will 'very soon take hold of the rod of justice in order to stop the sufferings which the ryots are enduring from the great giant Rahu, the indigo planter' (Mitra 1861, 15-16). However, such reassuringly loyalist sentiments can only be secured in the play through a conflict between the metabolic imperatives of human 'animate power' and that of aquatic 'flow energy' (Malm 2016, 39-42) harnessed to the interests of imperial agri-business.

The indigo plant is the source of the blue dye still used in cotton textiles, and as Guha (1974, 1) and Sarkar (2014, 123) have both argued, the Indian 'indigo rebellion' of 1860 was in response to a constellation of national and international crises – a slump in London indigo prices, the Union Bank crash in Calcutta, the consequent squeeze put on the more modest planters by the sector's big beasts - which meant that the cultivators were increasingly terrorised into growing a crop that was economically unviable for them. Like other tropical plants, Indigo thrives in relatively high soil temperatures (18-20˚c) and high volumes of water is required for washing away any residual salinity (around 1000m3/hec). If planted as a 'cash crop' alongside a 'food crop' like rice, it can lead to a competition for 'energy flows' to the detriment of the latter. In Mitra's play, the global crises of falling profit rates in colonial agri-business is shown through a specific local conjuncture, where vital forms of 'flow' energy are directed away from the subsistence needs of the cultivators to the planters' profit imperative. Hunger, therefore, appears as the most recognizable sign of this energy rift. The food scarcity which compels the ryots to migrate is engineered by cash loans forced on them by the English planters in order to divert their water, land and labour to indigo cultivation.

Hunger also affects the people disproportionately. It is much more acute for tenant farmers like Sadhu Charan or Torapa, than for relatively secure ryots like the Basu family. The latter's claim to 'gentlemanliness' in the play is secured not only, as Guha rightly argues, through the possession by the men of a certain amount of cultural capital – the ability to access colonial law courts, their familiarity with Shakespeare (whose works in translation is cited by Bindu Madhab, one of Goluk's sons, in his letter) – ,but also via their voluntary subjection to the starvation, that is metabolic energy depletion in solidarity with their tenant farmers. When Goluk Basu loses his legal case against the planters and is jailed, he fasts for four days before committing suicide. His death brings the ryots on the brink of insurgency, but the moral fibre of 'gentlemenliness' requires the refusal of Goluk's sons to turn their father's sacrifice into a trigger for insurgency –

'Two hundred ryots with clubs in their hands are crying aloud […] I told them to go to their houses, since if the saheb gets the least excuse, he will, […] burn the whole village' (1861, 170).

Thus, Mitra's gentlemen-farmers accrue what Guha calls the 'borrowed ideals of liberty' through a conflict between flow and animated energy. But we can go even further than this. What is often in discussions of Mitra's play is how sexuality and religion are integral to these conflicted interplay energy forms not only to indigenise liberalism, but also to appropriate justice itself within the folds of a conservative Hindu sensibility. The play's outrage lies not only in the indigo planters' un-just appropriation of the Basu's lands, but also in their encroaching upon the sexual claims of the indigenous patriarchs on their women. Such appropriations are not only seen as unjust and dishonourable, but also take the specific form of prohibiting the women's access to the water of the village pond or 'tank' - 'What honor remains to us now? The planter has prepared his places of cultivation round about the tank [….] In that case, our women will be entirely excluded from the tank' (1861, 23). The most acute form of dishonour is the rape of one of the Basu's daughters-in-law, Khetramoni, by a planter. The young woman dutifully interprets this as an assault not against herself, but against her husband, and compares her ordeal to a choking of her sexual- and socially reproductive energies that results in a still-birth and eventually, her death (1861, 106, 172). The play itself ends with Gokul's widow, Sabitri, cradling the dead body of her eldest son Nobin and attempting in vain to force her breasts onto his mouth. The injustice of the indigo plantation system manifests itself as the forcible appropriation of the indigenous aquatic, metabolic and reproductive energies at the same time. 'Further, honour in the play is not only gendered, but also communalised, because it is Muslim men like the planter's 'agent' Amin, who are directly responsible for its violation. Drawing on the hoariest and crudest Islamophobic stereotypes, Mitra shows Amin as a corruptor of the proper channels of female 'animate energy'. He has served up his own sister to his English master's pleasures in order to further his career, and his very body is seen as anathema to Hindu sensibilities– 'Oh, the beard! When he speaks, it is like a he-goat twisting about its mouth […] fie! fie! The bad smell of

onions' (1861, 54). He is the 'degenerate' who is instrumental in Khetromoni's rape and the extractive agent who is 'ruining the country' to the extent that his religious marker – 'Musulman' (Muslim) – has become a common term of abuse amongst the Hindu ryots. Amin's graphic violence against the peasants is of a piece with his sexual violence against their women - he is the Other against which the moral credentials of a Hindu liberal order as well a proper ordering of libidinal animate energy are secured in the play.

Written nearly four decades after Mitra's play, Kipling's 'Bridge Builders' is often, and rightly, read as a paradigm of a muscular imperialism that presents gendered work as the raison d'etre of imperialism. But keeping in mind some of the interpretative protocols of 'energy humanities', we may be able to offer a slightly different conclusion: that for Kipling, true 'justice' can only be realized through work; that this work is racialized and gendered insofar that only some (white, European) men are able to properly perform it, while others (non-white, non-European) follow their examples; and that this brotherhood is achieved by a balancing the forces of 'flow' and 'stock' energies which brought about by a judicious use of 'animate power.'

The narrative begins with the engineer Findlayson's surveying of the imminent completion of his masterpiece – the great Kashi bridge spanning the river Ganges. Such work demands the mastery over the aquatic forces of the river, navigating the entropic drag of imperial bureaucracy and harnessing the 'animate power' of the colonised humans and beasts under his command. Among this work-force, it the foreman Peroo who stands out precisely because his mastery over water – '(Peroo) is a Lascar, familiar with every port from Rockhampton and London, and who after rising to the rank of a serang on the British India boats, had wearied of the work-discipline there and thrown up the service and gone inland.' (1987, 8-9) Peroo's familiarity with the flow energy of the oceans; his expertise with 'tackle and handling of heavy weights'; the authority he wields over the labourers in the name of 'honour' – make him not only an invaluable assistant to the British engineers, but in effect, the co-author of their civilizing mission. Kipling is careful to serve up this 'liberal' assumption of (qualified and precarious) racial

equality with the usual dose of irony. While Findlayson smiles paternalistically at Peroo's proprietorial behaviour towards the bridge, the readers are invited to smile back at the Englishman's assumed professional expertise via accounts of Peroo's heroism that 'saved the girder of Number Seven Pier from destruction when the new wire jammed in the eye of the crane, and the huge plate tilted in its slings' (1987, 8-9).

Peroo's professional instincts compel him to warn Findlayson that the river is bound to react unfavourably to being 'bitted and bridled' by the bridge, since 'she is not like the sea, that can beat against a soft beach' (1987, 11). The engineer is sceptical because Pero's advice is couched in the non-secular language of Hindu cosmogony. The bridge, as far as the Englishman is concerned, is meant to undergird the secular triumph of fossil energy of steam railways over the flow of the Ganges. But Peroo is proven right when unseasonal rainfall upstream results in a flood that threatens both the bridge and the honour of imperial work.

As was the case in Mitra's play, honour is a key component of patriarchy and of justice. Peroo urges his workmen to 'fight [the river] hard, for it is thus that a woman wears herself out'; and as the flood threatens the destruction of countless (Indian) lives and property, it is his own honour that Findlayson is most worried about – 'Mother Gunga would carry his honour to the sea with the other raffle […] Government might listen, perhaps, but his own kind would judge him by his bridge, as that stood or fell' (1987, 17-18). At this critical juncture in the tussle between aquatic and fossil energies, a specific kind of indigenised 'animate power' intervenes. As the exhausted workers watch the flood water creep up the bridge, Peroo offers some opium pellets to Findlayson which he claims are 'meat and good toddy together, and they kill all weariness, besides the fever that follows the rain. I have eaten nothing else at all […] clean Malwa opium' (1987, 19).

Like indigo, opium was a key imperial cash crop insofar the profits accrued from its export from India (most famously, to China) were essential for maintaining a favourable balance of British trade and geo-political power, and its cultivation diverted massive amounts of land, water and

labour that would otherwise have been expended on subsistence agriculture (Trocki 1999, Brook and Wakabayashi 2000, Baumler 2001, Melancon 2003). In making it the drug of choice of the Indian labourers who use it to fend off the effects of their depleting metabolic reserves caused by a lack of food, as well as that of the English engineer, who dulls with it the anxiety caused by his impending loss of honour, Kipling reveals uncannily accurate picture of both the political- and the energy-unconscious of modern imperialism.

With a flick of the narrative switch, the ingestion of opium memorably takes us from a realist to a 'critical irrealist' narrative register (Löwy 2007). As we saw earlier, Findlayson's opium-dream is one where the Hindu gods debate the fate of the bridge, and by extension, that of British empire in India. When Ganges, in the shape of a crocodile, complains about the bridge-builders taming her, she is answered by Ganesh (the elephant god) and Shiva (the bull), that it is the British railways that had ushered in the era of the 'fat money-lenders', since 'all the towns are drawn together by the fire-carriage, and money comes and goes swiftly, and the account-books grow as fat as myself' (1987, 26). It falls to Krishna, one of the original Hindu trinity, to pronounce a favourable judgment on the transformative nature energy that drives the railways:

Great Kings, the beginning of the end is born already. The fire-carriages shout the names of new Gods that are not old under new names. Drink now and eat greatly! Bathe your faces in the smoke of the alters before they grow cold! [….] As men count time the end is far off; but as who know reckon it is to-day. (1987, 32-3).

The peace between the flow of the Ganges, and the stock of the railway-bridge, is thus brought about by the opium fuelled metabolic surge in the animate power of the imperial workers.

As was obvious from our brief discussion of our third text above, Hossain's fable can be thought of as a kind of anti-Babu fiction insofar it disputes gentlemanly claims to the custodianship of culture – British and indigenous alike. In contrast to the productive management of water, steam and metabolic energy by English engineers or 'respectable' Indian

farmers, Hossain offers us the vision of a just but still unequal society where positive discrimination against all men is an acceptable price for transition towards a utopia where such inequalities can one day be banished. Such a transition, we saw, was made possible only by harnessing the non-fossilized solar energy by a group of women experts. For Hossain, the weaponizing of solar energy helps to augment (and alter) the international rules of a 'just war' because it is conditional on the aforesaid removal of the men from the public domain to that of the domestic.

But the use of solar energy is far from confined to the restructuring of the 'public' domain. It also decisively changes the nature of domesticity itself. Shortly before she recalls the history of warfare, Sister Sara takes Sultana on a tour of her well-appointed and perfectly ventilated house. Amazed that she manages to do both her 'domestic' work and her 'office' work with ease and excellence, Sultana asks Sara how she managed to do all this in the conventional time allotted to the latter (seven hours). In her reply, Sara first dispels the myth of the 'office time' – explaining that men waste up to six hours a day at work indulging in the consumption of tobacco. Like indigo, the history of tobacco reveals what Nan Enstad has recently shown to be the growth of multi-national, corporate imperialism in the twentieth century based on agro-business that displaces rich and variable indigenous subsistence agriculture with a 'cash' monocrop (Cigarettes, Inc. 2018). Sara's deconstruction of what counts as manly 'office work' reveals the deep structural connections between the paper-world of the modern imperial bureaucrats and the fieldwork of their predominantly rural subjects.

The second part of Sara's reply to Sultana alters the notion of domestic work by using that most exemplary of gendered spaces – the kitchen. Once again, Sultana is stunned by the utopic re-structuring in evidence here:

The kitchen was situated in a beautiful vegetable garden. Every creeper, every tomato plant was itself an ornament. I found no smoke, nor any chimney either in the kitchen – it was clean and

bright; the windows were decorated with flower gardens. There was no sign of coal or fire. (Hossain 2005, 7 my italics).

As Sara explains, it is precisely by turning away from the fossil fuel par excellence – coal – that the women have achieved such radical renovation – " 'With solar heat,' she said, at the same time showing me the pipe, through which passed the concentrated sunlight and heat" (Hossain 2005, 7). Crucially for Hossain, sunlight, unlike fossil fuels such as coal and oil, does not require a coerced concentration of extractive labour power at source. As such, it cannot be fixed as 'stock' by the capitalist classes for the 'endless' accumulation of profit. In this sense, it is even more fluid than water, and the transformations it allows in both the international/public and national/private domains is the necessary condition for the realization of Hossain's utopia.

Postcolonial scholarship usually reads Kipling, Mitra and Hossain in oppositional terms – the English man as an arch-imperialist, the former of the two Bengalis as a radical nationalist , and the latter as a pioneering feminist .But by paying attention to how they represent various forms of energy, we can detect the currents of mutual interests that bound them despite themselves. Their investment in the idea of justice – class-bound, gender- and race-inflected – without equality exposes the contradictions that ran through every level of modern imperialism and colonialism. For Kipling, a kind of cross-cultural and cross-racial fellowship of workers at the service of empire validates the latter's claims to be just without ever conceding to the notion of cultural or racial equality. For Mitra, the claim to imperial justice can only be mounted on the moral authority of the heroic Indian gentlemen-farmers who are committed to religious- and gender-inequality. For Hossain, the positive discrimination against all men and the resultant inequality is an essential step towards the justice of utopia. In each case, such conditional, contingent and transitory justice is sustained by the expert management of water, steam and sunlight. This might serve to alert us to the fact that radicalism, liberalism and authoritarianism can have at their core shared understanding of energy justice to activate their own respective

claims to world order. For an epoch that is hotly tipped to finally signal the end of the 'capitalocene', this provides a necessary caveat.

.