

POST-COLONIAL CONDITIONS: ANOTHER REPORT ON KNOWLEDGE

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I TECHNOLOGY AND TRIBE: THINKING NATURE AFTER MODERNITY

MIT's Media Lab and Palo Alto's Xerox Parc are among the most revered institutional names in technology research. Both aspire to write the future of technology. Both have aspirations to grow beyond US borders, and have made collaborative inquiries in India.

In May 2000, Pramod Mahajan, then Union Minister for Information Technology and Parliamentary Affairs, led a delegation to the US, and made plans with MIT's Media Lab to set up "a network of ... projects and laboratories dedicated to bringing the benefits of the most advanced information technologies to the neediest people" of India.¹ *The Business Standard* reported the following year on its success, in a story titled "Media Labs Asia brings education to the doorsteps of tribals," which opened with the story of a girl:

Nagina, a 15 year old girl belonging to the nomadic tribe Magar Sanghvi in Maharashtra has completed her vocational training at a nearby Media Labs Asia centre and has returned to teach the same skills to other children of her tribe. Her training was resisted by the menfolk of her tribe who did not see any benefit in education. But representatives of a life-skill training programme, somehow convinced them to let Nagina attend her classes.

Business Standard's reading audience, an entrepreneurial urban global class, is invited to participate in a familiar narrative of modernity. The backward ways of primitive India are summoned into the light of the present by information and communication technology (ICT). The pathos and promise of the story hinges on the body of a girl marked as tribal. The story continues:

Media Labs Asia looks at the application of Information Communication and technology for the upliftment of the backward sections of the country. It's

¹ As reported in the daily newspaper The Hindu, June 22 2001, archived online at <http://www.hinduonnet.com/businessline/2001/06/23/stories/14233961.htm>.

interesting to see the use of ICT in inducing life skills like healthy and hygienic living, basic mathematics and other such skills in these children.

At one level, the invocation of ICTs seems simply an anachronistic substitution in a familiar colonial discourse, substituted in the place of other (former) markers of modernity. The article reads as a comical imitation of the colonial discourse of cleanliness, hygiene, and progress that drove the civilizing mission. Numerous studies have shown how the temporal motion from primitive to modern, from backward to onward, was driven by a range of ideologies and practices, by the social life of material objects and the political life of emerging modern subjects. Whether it was soap or railways, clothing or newspapers, schools or ships, the discourse of progress remained remarkably stable, employing the now well-known rhetoric of darkness to light, savage to civilized. Isn't the substitution of ICTs simply an instance of false consciousness, the insufficiently enlightened post-colonial subject aping the English-newspaper narrative of an inherited political language?

It is, of course, always more complicated. Nationalism and post-colonial technoscientific modernity have, no doubt, taken on many of the toxic binaries of Victorian discourses of modernities; but the relation is never a simple one of appropriation.² The imbrication of pre-colonial, colonial and post-colonial social lives involves a complex overlapping of stratifications, privileges and hierarchies of caste, tribe, gender and region. As feminist scholars have shown gender is often overdetermined in these overlapping processes.³

In tracing the continuities and ruptures between Victorian anthropology and contemporary postcolonialism, one important distinction to note is in the sphere of political economy. The distinction to make is not a simplistic one of closed colonial versus linked global market; rather, it has to do with changes in the nature of

² This has pointed out by numerous scholars of colonial / nationalist discourses. For a recent example outside South Asian history, see Omnia El- Shakry, *The Great Social Laboratory: Subjects of Knowledge in Colonial and Postcolonial Egypt*, Stanford University Press, 2007.

³ See, for example, the work of historians Antoinette Burton and Mrinalini Sinha. For a focus on agriculture and science, see Kim Berry, *Lakshmi and the Scientific Housewife*. Berry shows how colonial, nationalist, and post-independence configurations of agrarian production were disparate, but in each case the issue of patriarchy and gender roles became overdetermined by a host of non-identical, non-inherent, but historically linked factors

transnational economies. If a colonial economy was primarily a source of raw materials, and secondarily a peripheral market for value-added products finished in metropole factories, a postcolonial economy such as India inscribes a very different political economy in its marking as both a source of technology labor power and an “emerging market” for consumer goods. Media Lab Asia positions itself at the heart of this transition:

At the click of a button, the child sees in front of him a virtual market, where he transacts with virtual vendor to buy vegetables, or fruits from some amount of virtual money. This simple exercise teaches him basic arithmetic like negative addition.

The use of local language in an interactive video and relevant animation help in making the children interact with their surroundings better.

“Post the programme, children are now motivated to attend an informal school, they realise the value of being neat and clean and keeping water and food free from contamination. It inculcated values like team spirit, transfer of knowledge amongst peers, relatives,” remarked Ananthkrishnan, advisor, Media Labs Asia.

To the “values” of neatness and cleanliness (continuous with the narrative of dirty natives cleaned by modernity) is added a familiar, but updated, inherently modernizing, decontaminating, knowledge-producing power of the market. The quotation above, by an urban Brahmin scientist, is particularly noteworthy for its invocation of a lack in precisely the areas in which village and tribal economies have been known to excel. Village children can usually do “market math,” or practical mental arithmetic, with a great facility than middle class urban children, who rely on calculators to do classroom sums, but rarely encounter transactions themselves (those are carried out by their servants, housekeepers, or female elders). Traditional tribal and village mechanisms to keep water and food clean are numerous. “Team” and “sharing” practices are far more common in rural and forest contexts; urban children are trained early in the habits of individualist performance.

To invoke such differences is not to assert essential difference in the form of “inherent” indigenous “values,” but simply to point to patterns of practice that are differentially located because the political economy of developing countries is uneven. It is the narrative of modernity, on the contrary, that insists on the importance of pushing toward a

uniformity, and that invokes the rhetoric of values. Precisely because the rural and tribal economic sectors still hold the relation to the urban that Raymond Williams identified in *The Country and the City*, we can still talk about patterns of practice that are functionally but dynamically linked to the existence of a differentially sloped economic terrain. The rural and tribal are still drawn on for raw materials and labor; they function like the public domain does to the sphere of corporate intellectual property – that is, they are a source of co-operative behaviors, labor-intensive skills and freely available raw materials, whose appropriation is crucial to the efficient functioning of the market.

I don't want to suggest that the market is a product purely of neo-liberalism, or that the discourse of the modernizing market is solely a post-independence phenomenon. On the contrary, the market is a much older historical construct. Its historicity neither determines its current appearance, nor does it leave it untouched. The 18th century discourse of possessive individualism, and the legacy of Locke via utilitarianism, were very strong in the colonies (perhaps even more so than in the metropole at mid-19th century)⁴ because the English utilitarians viewed the colonies as a laboratory where they could implement their theories in pure form, unfettered by the restrictions of parliamentary democracy and entrenched aristocratic and guild formations that existed at "home." We know that the particular ways in which the discourses of primitivism, Romanticism, and market economics come together are specific to their historical circumstance. Like these, technological apparatuses are not transhistorical truths that manifest themselves in different locales; rather the discourses are forged via assemblages of practices and ideas, apparatuses and policies, that have histories that do not fully determine them, and presents that come into existence via contemporary and contingent mobilizations of people and practices.

The reader might suggest here that we are reading too much into a minor column in a Business daily; sloppily written, incidental reportage, it reveals little about tribe, technology, and modernity. Are these the views of an ill-informed reporter, or views representative of a historical trend, of a segment of national opinion, a widespread legacy

⁴ For a larger discussion, see Eric Stokes, *The English Utilitarians and India*, Oxford University Press, 1990.

of colonial primitivist thought? Let us look, then, at a couple of other instances of contemporaneous discourses of indigeneity and modernity in India, this time academics who have access to the last few decades of anthropological scholarship – unlike, say, technocrats and journalists.

Contemporary Sociological Discourse on Tribes

In 2008, Gujjars, a so-called “tribal community,” hit headline news, when they filed for “denotified tribe” status.⁵ India’s leading sociologist, Andre Beteille, wrote a prominently placed article in which he cited the authority of 19th-century colonial anthropology as the ur-standard of tribal definition. He lamented that, in the contemporary politics of backwardness, no real standards apply:

[C]an the claims of the Gujjars, or any community, to be designated as a scheduled tribe be judged any longer on merit, or on objective grounds? Does expert or professional opinion on the subject count any more?

These turn out to be rhetorical questions, for he follows up the lament that no true standards are being applied by politicians with the startling assertion that the true experts on this subject, and the authority for contemporary judgements of authentic primitivism, are colonial ethnographers.

Anthropologists have written about tribes for well over a hundred years. It was, in fact, one of the key concepts of their discipline in its formative years.

Beteille believes that the main reason the definition of tribes does not still centrally occupy anthropology as a discipline is simply the worldwide decline in tribal populations, and thus the dearth of empirical data on true primitivity. Reminding readers of the true

⁵ For historical context on the Criminal Tribes Act, its logic and legacy, see Ajay Skaria, *Hybrid Histories: Forests, Frontiers and Wildness in Western India*. Oxford University Press, 1999; Meera Radhakrishna, *Dishonoured by History: 'Criminal Tribes' and British Colonial Policy*. New Delhi: Orient Longman, 2001; Kavita Philip, *Civilizing Natures: Race, Resources, and Modernity in Colonial South India*, Rutgers University Press, 2003;. For contemporary news coverage, see http://www.tehelka.com/story_main39.asp?filename=Ne070608colonel_gujjar.asp . For critical commentary see Mahasweta Devi, “Year of Birth – 1871” in *India Together*, <http://www.indiatogether.org/bhasha/budhan/birth1871.htm>

definitions of a tribe, he invokes true authorities (including himself and Verrier Elwin, fellow 1960s extenders of 19th century authorities):

A tribe should be more or less self-contained as a community, and ... should be relatively small and compact, and relatively undifferentiated and unstratified ... A tribe with an assertive and expanding middle class is, from the sociological point of view, a contradiction in terms. Such a phenomenon would have perplexed the anthropologists of the 19th century who first embarked on the systematic study of tribes.

Appealing to a pure, originary definition of authentic primitivity, Beteille reinscribes the classic anthropological fantasy of self-contained, pristine tribes, defining any change as a move away from the real. Because the real is located in a static unchanging past, any contemporary living “tribal” must by definition be inauthentic. Since, by definition, time brings a corrupting degeneration on the purity of tribal categories, here and now true tribals cannot exist; therefore there can be no tribal reservation. In India, he explains, we see “not so much tribes in their pristine form as tribes ... in transition to a different mode of organization.” No true tribal exists in the 21st century (the true tribal being a product of a timeless past, captured before the moment of disappearance by the 19th-century colonial anthropologist, last-known expert on the definition of tribe). Decrying the lack of expert discourse in the 21st century debates on reservations, Beteille points us toward the true experts, whose work gave us the legacy of an objective yardstick for the assessment of tribal authenticity. These are the experts, he avers, whose legacy includes an objective yardstick “for deciding which groups may be regarded as tribes.”

Beteille is also performing a familiar symptom of empiricist sociology: a blindness to the historicity of the very categories of his analysis.

The continuous economic, social and political changes of the last 60 years have led to the growth of a self-conscious and assertive middle class among several of the larger and more dominant tribes. They now include lawyers, doctors, civil servants, schoolteachers, clerks and many others in white collar occupations. Reservations in education and employment have contributed something to this process, but the growth would have taken place even without reservations, for the expansion of the middle class is an all-India phenomenon which is changing the character of Indian society as a whole. A tribe with an assertive and expanding middle class is, from the sociological point of view, a contradiction in terms. Such a phenomenon would have perplexed the anthropologists of the 19th century who first embarked on the systematic study of tribes.

Indian National Research Professor Andre Beteille, Emeritus Professor of Sociology at the prestigious Delhi School of Economics is not the only modern Indian intellectual who sees himself as a peer of Verrier Elwin, or who laments the loss of objective standards in the years since the decline of pure tribal anthropology. Sociologist Dipankar Gupta brought a sarcastic, acerbic analysis to the same controversy, and appeals to the same sociological ideals of objectivity and authentic tribalism. His articulation of authentic tribalism is more elaborate than Beteille's, and draws unapologetically on 19th century tropes of the noble savage, fresh from primordial creation. Sneering at the Gujjar practices of "bath[ing] with their cattle" and using outdoor toilets, Gupta describes authentic tribals (in contrast to Gujjars) as characterized by a "scrubbed and just bathed look." Gupta reminisces about Rabindaranath Tagore, and "how charmed the great poet was at the cleanliness and comeliness of the Santals, and how carefully they gave their bodies a decorative look."

Gupta's prose is unabashedly Rousseauvian, invoking the tribal as noble savage, clean, comely and decorative.

Both Gupta and Beteille appeal to a familiar picture of an ideal-type tribal, supposedly embedded in a primordial past (but evidenced only by its 19th-century prototype, via the discourses of colonial ethnography). In the primordial past that is the tribes' universal present, primitive man and primitive nature were one; the passage of time and the coming of modernity corrupt both, in this picture. Temporal degeneration helps the expert distinguish between the real and the fake, the authentic primitive and the inauthentic modernizer. The good tribal remains aligned with the purity of untouched nature; the bad tribal advances with the middle class and with modernity, losing his moral claim to nobility and alignment with nature as he chooses productive labor over hunting and gathering, urbanity over the forest.⁶ Gupta says, sarcastically, "as a tribe one can boast of a martial tradition, even a criminal genealogy to great effect. There are communities in

⁶ The constructedness of both sides of these binaries have been assumed for decades. Histories of forests and tribes abound, showing the historical embeddedness of narratives about productive labor and its Lockean resonances, modes of forest use and their romanticist fictions. Histories of resource management have show how tribal access to the forests was eroded through the experience of colonial forestry followed by postcolonial development, and that the inducements to productive labor were imposed by law and coercion

India that proudly brandish their brigandage past and the way they struck terror in the hearts of priests and scribes.” Gujjars are, he suggests, using their status as formerly categorized as a criminal tribe, for opportunistic political gain: “Instead of being shamefaced and taking some urgent home improvement steps, they actually expect to be rewarded for their doggedly illegal ways.”

Bad tribals, in this narrative, are ill-fitted to the modernity that they have opportunistically embraced; they are left with only the corruptions (but not the sophistication) of the present coupled with the backwardness (but not the natural purity) of the past. Thus Gupta could demand in capital letters in his essay title, “Gujjars should reform their backward social practices.” He argues that the Gujjars, by clinging to degenerate backward customs, “give the true tribals a false reputation.”

Backwardness and reform script a different temporality from purity and degeneration. In the narrative of backwardness, tribals remain stuck in a pre-Enlightenment past, and await the light of objectivity; confused by modernity, they are unable to see that their true nature is in nature’s purity, not modernity’s hybridity.

Gupta uses the example of the Gujjars to argue his larger political point:

The Gujjar agitation is a perfect, copybook example of what can go wrong with the reservation format that most politicians favour today. Once again fake histories and false heritages have been powered by political muscle.

He reminds us of the Hindu social reform movements of the 19th century, fueled, he suggests, by nationalist shame in the face of colonialist critiques of the degeneration of Hinduism.

When Raja Ram Mohun Roy or Ishwar Chandra Vidyasagar fought against child marriage and the degradation of widows, they did this because they were consumed by shame. They realised that Hindus had better reform their ways if they wanted to stand up as a proud community. In contrast, not only is there no sense of shame among ... Gujjar activists for the lifestyle they pursue.

Predictably, the nobility of women and children figure prominently in the construction of Hindu dignity. Gujjars are marked as primitive because of the ways in which they treat

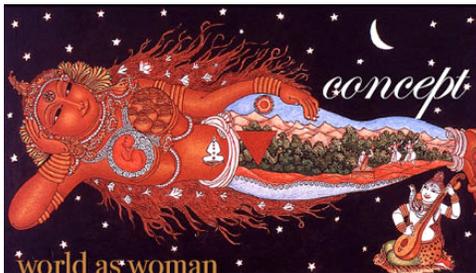
women – characterized, in Gupta’s description, as involving regular “child marriages, buying women and polyandry.”

At the start of these examples, I suggested that the pathos and promise of popular stories of technoscientific modernity hinge on the bodies of those marked primitive, and woman. We see this again here – if Nagina was the innocent child-subject of new technological modernity, on the threshold of liberation from bondage from her tribal patriarchy by the agency of the computer, here we see the abject child bride and degraded widow as the other of true modern subjectivity. Gendered, raced subjects serve to highlight the contours of modernity by marking the spatial margins, temporal pasts, and potential futures of modern citizenship and subjectivity. Developmental and intellectual agency emerge with renewed vigor in the hands of the experts (anthropologists, new media technologists) on the post-colonial stage.

The postcolonial anthropologist of modernity has inherited some complicated baggage. How are we to read these presents and pasts together? Let’s consider another example.

www.sacredworld.com is run by a former Xerox Parc researcher, a computer scientist and designer with an award-filled resume and a network that includes the stars of the technology research world. Like many of the IT generation he has moved “back home” to India after a successful stint in silicon valley, and is pursuing his dream of socially relevant technology. His “Sacred World Foundation” describes itself as “a state of the art research and design think tank whose projects are exploring innovation created by building bridges between techno and traditional cultures.”

Among their numerous research projects is one called “Rediscovery of the Goddess.”



This project describes its goal as “developing digital content and new forms of computing interfaces and displays based on the world's Goddess traditions. The project will ... explore new forms of hi-touch, body-friendly interfaces and displays inspired by the feminine form.” [sic]

The project sees itself as bridging culture and technology. Here are its markers of “culture”: The image of Saraswati stands in for woman; an interactive rendition of Gita-Govinda for intimacy; Gandhi for the nation, Shiva for religion, Kashi and Brindavan for space. The seemingly unmarked categories of India, culture, tradition are shot through with a Hindu, bourgeois, nationalist imagery.

The image of woman is literally constituted by nature, and her prone body represents the world, appearing to subversively substitute a woman for the classic sleeping Vishnu (*Vishnu Ananthashayanam*), but in fact replaying two decades of geographical representation with a gloss of high-tech indigeneity. The agents invoked are “Techno Man” and “Traditional Man” [sic]; the object on whose body their synthesis occurs is “world as woman.”

The critique of this project can, of course, be taken for granted in a Humanities academic context – decades of work on orientalism, feminist geography, constructions of tradition and of modern Hindutva, deconstructions of the very notion of culture, and so on make it unnecessary to go into further detail. The fact that these projects win numerous awards for design and technology alert us, however, to a point that does need further investigation. There are disturbingly powerful connections between the buzzwords of technological innovation and the institutional support for the extension of modes of representing nature and gender that call for a closer attention. It's not just that technology has been left out of the critical attention of “nature”-oriented scholars, and vice versa, in the last two decades. The exceptionalism that attaches to science and technology seems to give it a power to carry ideology in ways that would instantly come under critique in avowedly “cultural” spheres like film, fiction, or media. While the cultural constructions

of nature have come under extended critique, nature's constitution with, and through, new technologies still remain marginal to environmental discourses.⁷

Further, given the uncertainty and periodic sense of crisis that has gripped US technocrats since the beginning of the 21st century, along with the emergence of the myth of the Indian computer programmer, an assemblage is emerging which calls for a kind of interdisciplinary attention that I try to sketch in the larger project of which this is a part. The assemblage is formed of human and machine parts, animates nationalist sentiments as well as transnational circuits, and circulates raced, classed, gendered postcolonials in particularized ambits.

Rationalist International

< Rationalist society video⁸>

Millions of Indians tuned in to watch the battle between science and superstition on March 3, 2008. By the end of this marathon TV event, the religious was “proven” to be that which is constructed by webs of belief, formed by weakness, psychological susceptibility, ignorance, blindness. Rationality emerged in the shape of Sanal Edamaruku, head of the Rationalist International. Sanal's final triumphant victory speech dismisses “blind faith” and calls on the nation to outgrow, overcome, and reject it. He is hobbled by his poor Hindi-language skills, but his poor grasp of the national language is not a source of embarrassment the way the nation's superstitiousness is for him. The appeal to nation is destabilized in the bodies of Sanal and the Sadhu in multiple ways. Language is one of them; the national construct shows its seams -- the fissures among the states and linguistic divisions that had to be papered over to form the nation-state itself. The notion of State for most Delhi-based, Hindi-speaking TV viewers is not one of heavily accented grammatically flawed Hindi, spoken by a South Indian dressed in

⁷ There are significant exceptions, such as Donna Haraway, in western scholarship, but, despite the vigour of south asian critical studies of nature and environment, Haraway's combining of informatics and ecology have not been influential on the subcontinent. On the other hand, the critique of technology is vigorous in the emerging field of postcolonial information studies (see Irani, et al, forthcoming), but issues of nature/environment rarely enter into those discussions (for emerging discussions, see Paul Dourish forthcoming, on sustainability, and Bill Tomlinson, Green IT, forthcoming).

⁸ For an English report, see the BBC World Service, http://www.bbc.co.uk/worldservice/outlook/2008/07/080703_india_outlook_challenge.shtml

tailored trousers and coat.⁹ So while the spiritualist inconsistently and contradictorily struggles to control the instrumental domain, his is not the only sphere haunted by forces outside his ken. The visual and textual incongruities and ironic subversions of this event suggest that rationality, too, is haunted by a specter. This is the very specter that has haunted empiricist visions of fact, positivist reliance on the litmus tests of verifiability and falsifiability, foundationalist quests for perfectly grounded axioms, instrumentalist dreams of error-free communication.¹⁰

Despite his poor Hindi speaking skills and western clothing, Sanal Edamaruku cannot be understood simply as “westernized.” The debate between Sanal and the Sadhu is not a debate between west and east, rationality and superstition, science and religion (although that is how it was characterized by participants, host and journalistic coverage of the event). Both Sanal and the Sadhu speak in the name of nationalism, but of different kinds. Both speak in a voice that has continuities with nineteenth-century anti-colonial discourses of nation, but that is updated for modern political conditions. Both are haunted by specters that are kin to political and epistemological spirits of the nineteenth century. Although their nationalisms, and the hauntings thereof, are intertwined, they are not identical; nor are they the opposites of each other. They are supplements of each other. Neither can profess purity, neither can claim to be the possessor of India’s true soul, without the always already present sense of contamination by the other. That sense is a combination of fear and conviction, a dread-filled sense of haunting. The purity and priority of one form of nationalism is asserted, in over-wrought and forced modes whose countours shape themselves around the required presence of the contaminating other form.

Sanal and the Sadhu are performing a struggle specific to India’s forms of nationalism. Hindu religiosity is expressed here via a claim to primordial truth but clothed in the garb

⁹ Compared with the TV anchor’s crisply tailored business style suit, Sanal’s is cut, unfashionably, floppy and unflattering, signifying not alignment with a contemporary fashion trend, but an alignment with a western scientific temper – fashion trends being momentary, the scientific temper being eternal.

¹⁰ Science and Technology Studies, and before it, the Philosophy of Science, offer us complex historical critiques of positivism. The spectres that haunt scientific objectivity can be explore through the arguments on constructivism, situated realism, and other post-positivist theories of truth. Sanal’s role here fulfills what Donna Haraway has dubbed the gentlemanly “modest witness.”

of nineteenth century spiritualist opposition to the modern.¹¹ The nineteenth-century social reform that Hinduism put itself through, in its complex engagements with the civilizing mission, left persistent traces. We can read those traces in every claim to originary status, to the priority of the religious sphere in the identity-formation of the citizen.

The ways in which religious nationalism is haunted by its (explicitly invoked) primordial ghosts and rationalist modernizing ghosts (woven through its structuring assumptions) have been explored by a decade of scholarship on the history of South Asian communalism and the so-called fundamentalist resurgence. The corresponding hauntings of secular technoscientific nationalism, however, are less studied. As Bliss Lim notes, however, “disenchantment is preoccupied, plagued with enchantment.”¹²

Unlike Hindu revivalism and its historical relationship, through the *Sangh Parivar*, to party politics, secular nationalism’s desire for a more perfect rationality has not manifested itself in a particular political party. Nevertheless, it does not follow that it has no place in party politics; rather, its traces are in all post-independence politics, in every party, in the Constitution’s hopes and the State’s policies. The Planning Commission at Independence,¹³ or the National Knowledge Commission in the late 20th century, embody it. Political scientist Srirupa Roy has argued that science and the state were intertwined in the twin discourses of scientific expertise and scientific temper. Her claim is borne out by scientists Bhargava and Chakrabarti, of the Center for Cellular and Molecular Biology, who argued as recently as 1989, in a high-profile and widely-read article in *Daedalus*:

We [Indians] have a tremendous respect for tradition, age, and power, which, more often than not, dampens the desire to question authority and thus acts as an impediment to the development of what Jawaharlal Nehru called the “scientific temper.” The Indian family structure and the way children are brought up make irrationality the anchor of thought and argue against the spirit of science and its pursuit.

We are by and large fatalistic. We take no steps to avert [calamities] or

¹¹ See *Khaki Shorts, Saffron Flags: A Critique of the Hindu Right*. Tapan Basu, Pradip Datta, Sumit Sarkar, Tanika Sarcar, Sambuddha Sen Orient Longman. 1993.

¹² Bliss Lim, email correspondence

¹³ See Partha Chatterjee, *Nation and its Fragments*.

to cope with them with modern science and technology.

An offshoot of this tendency is that we are not real planners ... Our solutions are ad hoc, trivial, and transient. We do not believe in learning from our past or that of others. ... We may begin well, but we pursue hardly anything to its logical conclusion. What a contrast to science, which always builds slowly but surely on accumulated knowledge. Our approach to problem solving is emotional, not intellectual. ... [Our] attitude undermines the desire to forge ahead, which is so basic to the advancement of science.” (Daedalus 1989, 356)¹⁴

Alternative sciences and Scientific Temper

It is not only “Big Science” and official state discourses that adopt the language of technological rationality and scientific modernity. Post-independence India has seen a wealth of “alternative science” movements, in which dissenters refuse the standard line on technoscientific modernity. These dissenters have often been well-trained, high performers in the modern India’s scientific education system. Beginning in the 1970s, a small but steady stream of maverick technologists has trickled out from some of India’s elite technocratic educational institutions. Not statistically significant enough to have merited any sustained scholarly or journalistic study, this has nevertheless persisted to form, over the decades, something of a movement, or at least a recognizable form of dissenting life practice, by the early 21st century.

Alternative science efforts have persistently taken up the critique of scientific expertise. What is worth noting in the context of our discussion, however, is the ways in which their oppositional discourses are articulated in terms of scientific temper (with its combination of positivist grounding and nationalist fervor).

The *Patriotic and People-Oriented Science & Technology* began as a “movement of ideas” in the 1980s, started by engineering students, largely from the Indian Institutes of Technology, who stepped off promising technocratic career tracks to search for an alternative science – one with roots in Indian indigenous knowledge, but that could be retooled for a specifically Indian modernity. In its introductory publication, the group articulated its conviction that science and technology had wrought destruction upon the

¹⁴ Pushpa M. Bhargava and Chandana Chakrabarti. *Daedalus* 118 (4):353-368, Fall 1989.

west, and must be halted from its destruction of Indian society.

[I]t is now becoming increasingly clear that the development based on modern S&T [sic] has only resulted in a further material, intellectual and cultural deterioration in these societies in the post-colonial period.” ... [The] re-evaluation of the non-Western traditions could help in our present-day search for alternatives (technological and social) to the development based upon modern S&T.

The small group with almost no funding or organizational experience began an ambitious project to reassess received understandings, both technical and social, of western and non-western sciences. Their results were published in the *PPST Bulletin*.

It is the objective of the *Bulletin* to attempt a re-evaluation (from the point of view of the non-Western World) of the modern S&T and of the non-Western cultures. This re-evaluation, we hope, will raise the possibility of the development of an alternative S&T; an alternative based on more human values; an alternative that would lead to a better, self-reliant and non-exploitative social order, thereby constituting a Patriotic and People-oriented Science and Technology.

As late as 1988, the PPST Bulletin was still calling for “self-reliance,” advocating electronics and computing as an area where this could be achieved within 5 years. Self-reliance in science and technology was a policy connected with State discourse of self-reliance in food grains, education, and so on – but with the added weight of an intellectual, not just economic agenda. With PPST we see the idea of national self-reliance in science and technology become articulated as a grass-roots movement agenda.¹⁵

In 2008, The PPST and Anna University have a jointly-run research center which articulates its mission in terms of the now familiar nexus of indigenous knowledge and global entrepreneurship:

An organisation whose focus is on evolving ways of speedy industrialization of Indian society based on indigenous resources and skills, and in a manner appropriate to our context and culture. The centre's programmes can be broadly classified into three areas - Entrepreneurship development (workshops and training

¹⁵ The context for this was the history of the post-independence Indian state's policy of self-reliance, indigenous science and technology as a governmental policy of non-alignment with the super-powers, and a de-linking from the global economy. But the ways in which this seems to have trickled down to be conceived of by the 1980s as “alternative” i.e. non-State movement. (By 2000 this is a barely-remembered archaism.)

to enable entrepreneurial ventures), research and development (for reconstruction and characterization of traditional technologies and processes) and education and training (integration of traditional knowledge into the mainstream education system). Some of the centre's areas of interest are : architecture, artisanal industries and crafts, decentralized textile processes, food processing, metallurgy and metal working, natural dyes, pottery and ceramics, environment, ecology and natural resources management.”

Resistant anti-colonial nationalisms, too, have come to rest, since the liberalization of the 1990s, on the hope of entrepreneurship. The 21st century techno-utopian story reaches from the Technoparks of Bangalore to its rural hinterland with a consistent theme: the packaging of computational power and/or indigenous knowledge as consumable technoscience, and the training of its people (inherently emotional and disorganized, according to Bhargava and Chakrabarti 20 years earlier) in entrepreneurial subjectivities.

An advertising campaign for the BJP in 2003 summed it up with the slogan, “India Shining,” coined by the national creative director of the advertising agency *Grey Worldwide (India)*, Prathap Sulthan. Sulthan explained:

'India Shining' is all about pride. It gives us brown-skinned Indians a huge sense of achievement. Look at the middle-class and they tell the story of a resurgent India."¹⁶

Asked how he came up with the slogan that gained notoriety as the most successful ad copy in India's history, Sulthan recalled:

We had a tight deadline and so I worked on tourism slogans (used by other countries) like 'Rule Britannia' or 'Come, Play in South Africa.' [“*India Shining*”] really clicked and has now permeated into our political language.

There are, of course, many routes into the smooth surface of this construction of happy middle-class technocrats. The striations that mess up the simple associations of tribe and technology, gender and the network, superstitious past and scientific futures, are visible not only in the discourses of Media Lab Asia and Xerox Parc entrepreneurs, but in the

¹⁶ See news report, archived at <http://www.rediff.com/money/2004/apr/02shining.htm>- AFP

anxieties of the State itself. A recent Planning Commission document delineates the anxieties of development: set directly in the middle is “extremism.”¹⁷

“Extremists,” the State Report tells us, call attention to the unevenness of development, to the racial, caste and gender lines along which the technological sun shines. The numbers lend strength to the extremists, the nay-sayers of techno-utopias. One-fourth of India’s population is composed of historically disenfranchised groups, Dalits and Adivasis. As Lyotard suggested, the matter of survival is paramount here.

Table below from the Indian State’s Planning Commission Report:

Table 1: Caste, Ethnic Group Inequality, 2000

Human Development Indicators		SC	ST	OC	ALL
Poverty					
1	Poverty - percentage of poor (Rural)	36	46	21	27
2	Poverty - percentage of poor (Urban)	38	35	21	24
3	Poverty of Agricultural Labour (Rural)	46	61	39	45
4	Poverty of Casual Labour (Urban)	58	64	45	49
Mortality and Undernutrition					
1	Infant Mortality (per 1,000 live births), 2005/6	51	44	36	NA
2	Under five mortality, 2005/6	88	96	59	NA
3	Proportion (%) of Children with Anaemia	78	79	72	NA
4	Proportion (%) of Underweight Children	21	26	14	NA
Access to Agricultural Land and Capital Assets					
1	Value of Assets per Household in Rupees (1992)	49,189	52,660	134,500	107,007
1	Percentage of Self-Employed Cultivators	16	48	41	NA
2	Percentage of Wage Labour (Rural)	61	49	25	NA
3	Percentage of Casual Labour (Urban)	26	26	7	NA
Unemployment Rate (Rural) (Current Daily Status) %		5.5	3.0	3.4	NA
Non-Agriculture Wages of Rural Labour (in Rupees)		61.06	54.38	64.9	NA
Literacy					
1	Literacy Rate, 2001 (Rural)	51	45	63	59
2	Literacy Rate, 2001 (Urban)	68	69	82	80
Percentage of Non-Agriculture Workers (job diversification)		27.07	15.80	32.2	NA
Discrimination and Atrocities					
1	Number of registered cases of discrimination, 1992-2001	14,030	876	-	-
2	Number of registered cases of atrocity, 1992-2001	81,796	7,645	-	-
3	Total cases of discrimination and atrocity, 1992-2001	285,871	47,225	-	-

SC: Schedule Caste; ST: Schedule Tribes; OC: Other Caste (Non-SC/ST)

Sources: Employment and Unemployment Survey 1999-2000 (National Sample Survey Organization, New Delhi); Consumption Expenditure Survey 1999-2000 (National Sample Survey Organization, New Delhi); Rural Labour Enquiry Report, 1990-2000 (National Labour Bureau, Shimla); National Family Health Survey 1998-99 (International Institute of Population Studies, Mumbai); Census of India 2001 (Registrar General of India, New Delhi); Annual Report of Commission for Scheduled Castes and Scheduled Tribes 2005, Commission for Scheduled Castes and Tribes, New Delhi.

Even the shining State articulates the connection: “an overall scenario of poverty, deprivation, oppression, and neglect in large parts of the country” lends power and force

¹⁷ Planning Commission of India, 2008 Report on extremist-affected regions

to the language of extremism, that is, of revolutionary violence, of the rural rising up to confront the promises of the post-modern techno-urban and betrayals of post-colonial modernity.

The adjustment of caste-marked bodies to the accumulation of capital fuses an older, spectral politics of tainted and pure bodies with the post-liberalization era politics of regulation.¹⁸ The new human emerges suited for neither night soil nor nanotech. In early 2009, a State expert commission announced the end of reservations for “lower” castes in Indian Institutes of Technology.

Business Standard's report on Media Lab Asia: needs Nagina, the tribal girl, as its foil. The urban and the rural, the tribal and the technological, the feminized, irrational forest and the masculinized, rationalized technological object, constitute each other. Indian Academic anthropology repeatedly conjures the rousseauvian noble savage, and the incongruousness of modernity for the native, recalling for the critic the metaphysics of presence affiliated with primitive nature, and the corruptions of history for the pristine native.

Scientific temper and nationalism play themselves out in the drama of the Rationalist International: Sanal v. Sadhu, Superstition v. Science. They are misrecognised by Indian media as the faces of tradition and modernity (and, correspondingly, by the New York Times, Wired, and other western media outlets reporting on the global India). But they are Victorian caricatures of subcontinental traditions, rigidified parodies of both science and religion.

Nationalisms, both secular and religious, are haunted, each by its excluded other. The exclusions of race haunt the modern. Nature haunts technology. The Commons haunts Property. Naxalbari haunts South Asian techno modernity. The solution is not a “balance” between science and superstition, tradition and modernity, and so on, fictive categories all. Rather, what is needed is an account of their mutual haunting.

¹⁸ In speaking of adjusting bodies to capital, I am drawing on Foucault's argument (Birth of Biopolitics) that: “The adjustment of the accumulation of men to that of capital, the joining of the growth of human groups to the expansion of the productive forces and the differential allocation of profit, was made possible in part by the exercise of biopower.”

Rather than argue that underdeveloped humans were saved by the more-than-human network, or that the Third World becomes modern thanks to its citizenship in a transparently rational computational universe, rather than claim that we are confronted with an intelligently designed and already functioning technical knowledge that can move us to the promised future of ever-smoother connectivity, I suggest that technology's intelligent design only emerges through historical and political negotiations, or what Foucault has characterized as a constant war. The repression of these war stories is standard practice; it renders the striations of history into the smoothness of techno-phandom. The waking up of these stories is the practice of talking to the hobgoblins in the machine, and the specters that inhabit entrepreneurial subjects.

Technology functions through, not above, or despite, the messy and contingent practices of business, geopolitics, religion, inefficiency, inequality, and extremism. Agonistic and contestatory negotiations of States and people, via relations laden with geopolitical and economic values, dynamically produce the meanings of technology, science and capital, rather than deploying it pre-formed. We should not in advance assume the existence of a particular practice of science or a technological object. Technoscience appears as a coherent set of practices and ideologies and as an overarching, dominating imaginary; but rather than assume that coherence arrives pre-formed, we should examine the labor, the efforts, constant and continuously iteratively ongoing, to make that appearance arrive as if fully formed.

II WHY AN OTHER POSTCOLONIAL REPORT?

My title obviously alludes to Jean-Francois Lyotard's 1979 *The Postmodern Condition: A Report on Knowledge*. Why an "other" report? And why post-colonial ?

First, of course, this "report" is not a genuine report, as Lyotard's was, to the government of Quebec. Inhabiting another set of histories, it sets itself a task not in opposition to Lyotard, but one that rests in the domain that he outlined – namely, the place of science in discourses of modernity and of post-modernity. As Jameson described in the Preface to

the 1984 edition, Lyotard's subject matter was "the status of science and technology, of technocracy and the control of knowledge and information" (viii)

If one kind of science ("Science1") spoke the language of instrumentality, predictability, denotation, and determinacy, another ("Science2") speaks the language of radical undecidability, connotation, paralogy, and indeterminacy. (Science 1 and 2 were not the terminology of Lyotard, markers that I found myself making while working through the essay, as he switches from one to the other, often without announcement.)

For a summary closer to the actual text, here's Mark Poster :

"Modern society, Lyotard argues, derives its legitimacy from narratives about science. Within science, language (1) does not legitimate institutions (2) contains the single language form of denotation (3) does not confirm the addressee as possible sender (4) gains no validity from being reported (5) constructs diachronic temporality."

It is the fifth, diachronic temporality and its undoing, that my interest in haunting takes me to. But meanwhile we recall that in Lyotard's *Postmodern Condition*, in contrast to modern scientific denotation, postmodern little narratives performed to validate difference, invention, the unknown and unexpected. Unlike Marcuse, Habermas, and other critical theorists of technoscience, Lyotard didn't stop at the critique of the modern instrumental definitions of science. While the denotative form of science has been widely critiqued since the 1980s, it's worth thinking more about where Science2, or the postmodern science of paralogy and openness is currently.

As for the other element of my title, the translation of the post in postmodernism to the post in post-colonialism, we might recall Kwame Anthony Appiah, who said in 1991 :

"I do not ... have a definition of the postmodern to put in the place of Jameson's or Lyotard's".¹⁹

Like him, I wish not to replace a definition, but to look again, from another place. The post-colonial, or the space of the Third World, is not an altogether "other" space in Lyotard's narrative either; it is invoked several times in this short book, and in other work of Lyotard's. Consider his essays from the 1980s:

¹⁹ Appiah 1991, "Is the Post in Postmodernism the Post- in Postcolonial?"

Public space today is transformed into a market of cultural commodities, in which 'the new' has become an additional source of surplus-value.

When the point is to extend the capacities of the monad, it seems reasonable to abandon, or even actively to destroy, those parts of the human race which appear superfluous, useless for that goal. For example, the populations of the Third World. (Lyotard, *The Inhuman*)

Or his essay in 1985 defining the “Post-“

We could say that there exists a sort of destiny, or involuntary destination toward a condition that is increasingly complex. The needs for security, identity, and happiness springing from our immediate condition as living beings, as social beings, now seem irrelevant next to this sort of constraint to complexify, mediatize, quantify, synthesize, and modify...

... Humanity is divided into two parts. One faces the challenge of complexity, the other that ancient and terrible challenge of its own survival.²⁰ (Lyotard, *Notes on the meaning of Post-*)

In addition to a new attention to science's internal discursive revolutions, the yoking of philosophical concerns to the material, economic effects of multinational capital was a significant thread that Lyotard's *Report* added to critical theoretical discussions of post-modernism. Many subsequent commentators took up the related themes of justice and foundationalism. Mark Poster noted:

As the second media age unfolds and permeates everyday practices, one political issue will be the construction of new combinations of technology with multiple genders and ethnicities. These technocultures will hopefully be no return to an origin, no new foundationalism or essentialism, but a ... struggle against restrictions of systematic inequalities, hierarchies and asymmetries.

The shift of the “post” from postmodern to postcolonial, then, is related to the shifts in political power that decolonization entailed, and which had far-reaching epistemological implications. Embedded within most conversations about post-colonialism is inevitably a recognition of the theoretical “crisis” of postmodernism, involving the crisis of representation, adequacy, and truth. Appiah cautioned, however, that what the

²⁰Lyotard, 'Note on the Meaning of 'Post-' , letter to Jessamyn Blau, May 1985, Lyotard J *The Postmodern Explained: Correspondence 1982-1985* Univ of Minnesota Press MN/ Power Publications, Sydney 1992 reprinted in Docherty ed. *Postmodernism: A Reader*

postmodern reader seemed to demand of Africa is all too close to what modernism demanded of it, namely a satiation of a desire to consume otherness, and the circulation of cultural identities as a global commodities. He famously commented: “Postcoloniality is the condition of what we might ungenerously call a comprador intelligentsia.” His and other voices brought a modification of the notion that post-colonialism dealt simply with the historical era *after* the world was *done with* colonialism. Instead of the simple *post-* or *after*, he argued, we need to have conversations that began from different locations, formulating a critique that includes in its scope post-realism, post-nativism, post-communitarianism, and post-modernism. He suggested that the view from “here” and from “there” were different; and that they offered different implications for the role of postmodernism, and the meaning of the “post” in both postmodernism and postcolonialism.²¹

Appiah’s optimism rested in the conviction that postmodernism in African literature was already post-realist, post-nativist, making it more difficult for to be Othered. I do not think that postmodern technoscience, that is, the open-ended emergence of paralogy, is anywhere near as powerful a force as Appiah was suggesting postmodern African literature already was by the late 20th century. But it is a resistant undertone, a dissonant chord, almost everywhere.

But where is the move to postmodern technoscience in the representations of the Third World? Let us examine some of our representations of the technoscientific and of the Third World.

III STINKING HOT

Paul Ehrlich and Thomas Friedman are American academics, liberal social scientists who made casual visits to India (that is, not shaped by long scholarly study, with no historical or linguistic familiarity), and open their best-selling, world-shaping books with their

²¹ “The role that Africa, like the rest of the Third World, plays for Euro-American postmodernism ... must be distinguished from the role postmodernism might play in the Third World” – Appiah, 1991

personal, touristic, experience of it. Why are these touristic images so compelling to their readership, and what changes between 1968 and 2006, to make the resulting book, and its Indian framing, so divergent?

Consider these quotes, each from page 1 of their book:

Paul Ehrlich, *The Population Bomb* (1968):

I have understood the population explosion intellectually for a long time. I came to understand it emotionally one stinking hot night in Delhi a few years ago. My wife and daughter and I were returning to our hotel in an ancient taxi. The seats were hopping with fleas. The only functional gear was third. As we crawled through the city, we entered a crowded slum area. The temperature was well over 100, and the air was a haze of dust and smoke. The streets seemed alive with people. People eating, people washing, people sleeping. People visiting, arguing, and screaming. People thrusting their hands through the taxi window, begging. People defecating and urinating. People clinging to buses. People herding animals. People, people, people, people.

... All three of us were, frankly, frightened ...[but] the problems of Delhi and Calcutta are our problems too ... We must all learn to identify with the plight of our less fortunate fellows on spaceship Earth if we are to help both them and ourselves to survive.

Thomas Friedman, *The World is Flat* (2005):

“Aim at either Microsoft or IBM.” I was standing on the first tee at the KGA Golf Club in downtown Bangalore, in southern India, when my playing partner pointed at two shiny glass-and-steel buildings off in the distance, just behind the first green. The Goldman Sachs building wasn’t done yet ... HP and Texas Instruments had their offices on the back nine, along the tenth hole. ... The tee markers were from Epson, the printer company, and one of our caddies was wearing a hat from 3M. Outside, some of the traffic signs were also sponsored by Texas Instruments, and the Pizza Hut billboard on the way over showed a steaming pizza, under the headline “Gigabites of Taste!”

...

Columbus was searching for hardware – precious metals, silk, and spices – the sources of wealth in his day. I was searching for software, brainpower, complex algorithms, knowledge workers, call centers, transmission protocols, breakthroughs in optical engineering – the sources of wealth in our day.

Much of late 20th century global political economy pivots, unnoticed, on histories of science and technology. The 1970s obsession with India rested on its apparently out-of-control population. But it wasn't Amartya Sen's careful work (drawing on feminist economists's work on households, development, education) on the relationship of female literacy to national fertility rates that grabbed the headlines at the time, despite the fact that the leftist "Kerala model" was already being widely cited even in neoclassical economics. [This was a rich scholarly conversation co-eval with Ehrlich's population work] Ehrlich's book, however, resonated not just with any social scientists, but with a strategically important State security apparatus and its enabling scholarly apparatus. At mid century, with the wave of de-colonizations and the accompanying complexes of nationalist, anti-capitalist and non-alignment movements in ex-colonial nations, a growing US fear of the Third World expressed itself in an anxiety over population growth. Sheer numbers of people ("people, people, people, people") were seen as a reason for "why they hate us" – this seemed clearer than the explanations offered by the complex histories of settlement, control, exploitation and resistance with whose legacies post-colonial societies were wrestling.

The 1970s' First-Third world geopolitics drew on assumptions from the science of population, on the calculus of demographics and an equilibrium-equation of danger and fear ("we were all three frightened", Ehrlich says, invoking the spectre of 1857, white women and children threatened by the proximity of native bodies), leavened by pity for the "plight of the less fortunate" (this liberal framing being, in fact, a public relations exercise to elicit support for aid programs which required population control for the transfer of development dollars).

The 1990s, on the other hand, bring an apparent reversal. The reversal too is crucially undergirded by a technoscientific rationale.

If the complex cultural and political challenges of first – third world decolonization and post-colonial relations were short-circuited in the 1970s by the science of population (promising a technocratic cut through the social messiness, delivering an equation among the variables fertility, GDP, carrying capacity, linking human bodies and agrarian

productivity), the complexities of the 1990s are rendered once again in technocratic form, but this time via the measures of computational networked communication.²²



Note how brand-names undergird, and punctuate, the euphoria in Friedman’s happy narrative, while Ehlich’s fear-filled narratives draw literally on colonial tropes of heat and dust.

We see here a transition *from* modernity, but not *to* the postmodern as paralogical; rather, the image of the Indian transitions from the liberal population manager to the neo-liberalized individual producing and consuming under the sign of the commodity.

The Third World comes of age, then, becomes an equal citizen in the age of globalization, because it has earned subjectivity under the sign of the brand.

However, commodification is not the whole story, here.

Recall Lyotard’s comment in *The Inhuman*. The extension of the capacities of the autonomous self acting subject of modernity is accompanied by the discarding of those without subjectivity – under modernity, these were the “people without history,” third worlders. On the other hand, after modernity, numerous scholars of urban development showed how the equation between countryside and cities, and between first and third world, were transformed from the late 1970s on, so that postmodern political economies drew on remotely tele-connected urban centers in a transnational daisy-chain, rather than each drawing primarily on its rural hinterland. Thus shanghai, Tokyo, New York, Los

²² Many histories of institutional and academic development have linked mid-century population studies to State Department mandates, funding from well-connected non-profits (eg the Rockefeller funding, Population Council, business networks, and State imperatives combined efforts to develop depts. Of demography, population, etc). Few histories of the contemporary moment have linked State department imperatives to the study of networks, but similar interconnections can be seen in the work of Arguilla and Ronfeldt, as well as in the blogs of netwar observers, eg John Robb.

Angeles, Amsterdam, Mumbai, for example, would be connected to each other, minute to minute, night and day, rather than their primary connections being each, to their rural hinterlands, as in the picture formerly drawn by Raymond Williams in *The Country and the City*.

This shift has been widely noted. We can discuss whether this shift was over-drawn, and whether excited commentators like Edward Soja, or calmer sociologists like Saskia Sassen, overstated the new configuration and underestimated the staying power of the old. Or we could note that the sedimentations of the [modern] rural-urban articulation continue to haunt the postmodern dream of remote action at a distance (but more on that later.) What the new 24-7 chains of “global cities” made clear was that we needed a more multi-valenced way to talk about the functions of the third world in an emerging globality. No longer could the entire population of the Third World be considered superfluous and disposable;²³ suddenly the smooth surface of the construct of “Third World” (invoked by progressive and conservative commentators alike, a massive formation with a history of colonization that loomed over its future with a determining force) showed striations, variations, unevenness, and ambivalent depths. Not all of cried out to be protected from domination; indeed many of its inhabitants seemed eagerly to embrace the new globalism.

What of Lyotard’s genuine anguish, then, of the dividing of Humanity into two parts? “One faces the challenge of complexity, the other that ancient and terrible challenge of its own survival.” The destiny of ever-increasing complexity, versus the drag of history, the ancient challenge of survival – future and past pitted against each other, divided up along first and third world axes. We need to say something more about these two parts of humanity, account for the multiple striations among and within each part.

The first thing people usually say is that sometime between Ehrlich’s 1968 description and Friedman’s 2006 euphoria, India left the ranks of the Third World, and that, thanks to its new brand image, it is no longer a superfluous population. Indeed many nationalist

²³ It’s not clear that they ever could be so monolithically construed – recall Thomas Macaulay’s class of brown Englishmen. “Compradors,” etc were also like the global urbanists, they were always hooked into global networks.

economists and demographers gain a lot of mileage with this thesis, arguing that the population control experts of the 1970s have been proven wrong; that it is India's huge population that has made it the destination of choice for remote services, such as data entry, call centers, and the massive business process outsourcing that propelled the late 20th –century technological boom. Boosterist, forward-looking entrepreneurial Indians would add to this argument with the observation that sub-continental nationalists and socialists have harped too long on the legacies of colonialism. If not for the English-language literacy and the science-based curricula that the British Empire left behind along with railways and roads, they suggest, India would never have had either the linguistic competencies for call centers, nor the potential for growth that engineering and computer science education hold out for the 21st century.

However, although the 1st/2nd/3rd world conceptualizations have splintered, there remains an intransigent residue – India's colonial legacy has not completely transformed itself into the comparative advantage of linguistic competence plus low wages and a 12-hour temporal headstart.

The second phenomenon people usually turn to for an explanation is urbanization. There has been an explosion of erudite work on this phenomenon, but the lines are drawn in broadly political fashion, once again. Consider, for example Mike Davis and the *Financial Times*, on opposite sides of this:

Mike Davis calls urbanization of the globe unsustainable. Much of the urban world," Davis warns, "is rushing backwards to the age of Dickens." (*Planet of Slums*, 11)²⁴ The *Financial Times* (FT) calls for more urbanization.

Do too many Indians live in cities? No, too few do. Nearly 60 per cent of India's labour force works in agriculture, producing just 17 per cent of national output. Even by 2030, according to the poverty report, only 41 per cent of the population will be urban. That compares with China, where 47 per cent of people are already

²⁴ "IMF-enforced policies of agricultural deregulation and 'de-peasantization' were accelerating the exodus of surplus rural labour to urban slums even as cities ceased to be job machines." (*Planet of Slums*, NLR 26, p 10)

city-dwellers, and rich nations where 80 per cent or above is normal. India's slums give the impression that urbanisation has reached saturation point. But no nation has achieved prosperity without a shift from farming to manufacturing. India's problem is lack of urban infrastructure and job opportunities, not city life. (- D. Pilling, "Can Slumdogs Become Millionaires," *Financial Times*, 2/19/09)

FT deploys the narrative of technological progress. This kind of progress invokes new kinds of humans – this is not about savages, but about a human commensurate with the technological object that has been conjured by the 1990s.

There is a divide – but not exactly the one Lyotard invokes between 3rd world survival and 1st world complexity. Nor the one between domestic and public, women and men, colonized and colonizer that we are familiar with from subaltern studies.²⁵ But between a new kind of technohuman, transcending the organic, and an old one, mired in the muck.

We are by now used to seeing identity and subjectivity as shaped by the social and historical, even by the technological. Thomas Friedman's new golf-playing third world human is different, he might argue, because computational technology has shaped him anew. Nationalist and corporate thirdworlders, too, echo this notion when they advocate techno-capitalism as the route to modernity, with computational efficacy always available for deployment as a hard-edged weapon with which to turn back two centuries of constructions of the abject and effeminate. The post-colonial human, no longer savage, seems to have used the magic wand of technology to dissolve the binaries of master and slave. It is in this frame that we hear observations of the kind: "the world is increasingly non-western at an incredible rate."²⁶ Perhaps the world is increasingly non-western because new beings are being admitted into the realm of the human. More non-westerners have qualified for entry into the world, as modern subjects. It is technological efficacy that shifts the swarming sub-human mass of Ehrlich's Delhi experience into the suave, brand-saturated individuals of Friedman's Bangalore.

²⁵ See Spivak in *Grey Room*, and Dipesh Chakravarty, Tanika Sarkar in subaltern studies on 19th century domesticity

²⁶ Geert Lovink, UC Irvine, Critical Theory emphasis mini-seminar, February 2009

In this frame, in which identity is shaped by technology, the self can be seen as a social technology – thus we can extend the traditional domains of social science and the humanities to new domains. Analogously, we once thought sex and gender were separated as biology and culture, one determined and the other constructed, the former fact and the latter a fiction. Now we habitually explore how both are performed. Similarly technology and self now are released from the binary of fact versus fiction. But although it is now common to explore the endlessly interesting ways in which the self is a social technology, and subjectivity depends on a technological armature, it is worth reminding ourselves that technology cannot be called upon as an abstract philosophical, transcendental, or even juridical explanation for a particular form of selfhood.

Technology itself has no inherent shape or transcendental function. Technology cannot be a given, but is in any historical period a consolidation, a sedimentation, a conjuration of particular ideas and things. These assemblages “develo[p] entirely within the historical dimension” – as Foucault noted, in another context.²⁷ Technology emerges out of forces of contestation and antagonism (what Foucault characterized as “war,” moving war from an occasional outbreak of formal conflicts into the everyday hostilities and collaborations through which subjects and knowledge emerge). Technology is not the agent of transparent communication, the mechanism of pure instrumentality, nor even the apparatus of order and rationality. Lyotard’s *Science2*, I would like to argue, can be seen not just as a historical development within science itself (explicable by early 20th century developments in self-reflexive physics, computation, and ecological practice), but a reminder of this historiographical method. We must read technology and science not just instrumentally, transparently, transhistorically, philosophico-juridically. Rather, we read its contingent, temporary formations via its geo-political contingencies and its temporal disjunctures, its histories, politics, and perpetual hauntings. As Foucault noted, discussing his method, in *Society Must Be Defended*:

In summary, as against the philosophico-juridical discourse organized in terms of the problem of sovereignty and law, this discourse which deciphers the continued existence of war in society is essentially a historico-political discourse, a

²⁷ *Society Must be Defended*; in *Essential Works: Ethics*, p 62

discourse in which truth functions as a weapon for a partisan victory, a discourse at once darkly critical and intensely mythical.

How are we to speak then, of the new third world humans, baptized by a cleansing technology? Have they made the world more non-western? Of course the world has always been non-western (whether we measure it by surface area or population, geographers and demographers have always known this), so what new phenomenon is being noted here? What's at stake here is the search for a theory of the new technological object, in which, as Lovink averred, existing histories of computation do not help us. The object in question, for him, was the essence of the internet itself, explicable only by a complete theory of technological objects. But this object, at its heart, turns out to inhabit the domains of them, not us: we thought it was western; yet on examination it seems radically othered, because of the spaces in which it has gone native. Hence the horror — the other lives at the heart of the technological essence we so long fondly thought was ours, birthed from our heads, sprung from the creative hands and hearts of the western autonomous subject. How can the other inhabit it, always already swarming inside it, taking control of it, defining it in ways mysterious to us, in tongues unfamiliar? This is the paradox for philosophers of technology who seek a transcendental theory of the technological object.

There is a difference between the spaces we find ourselves in by posing a transcendental rather than a historical question about technology, a philosophical question divorced from rather than embedded in political wars.

What is this difference? I want to explore it as perhaps that between a hobgoblin and a specter.

III GHOST STORIES

A frightful hobgoblin stalks throughout Europe. We are haunted by a ghost, the ghost of Communism

-First English translation of the Communist Manifesto, by Helen Macfarlane.²⁸

[“Ein Gespenst geht um in Europa – das Gespenst des Kommunismus.” Marx and Engels, 1848]

Peter Linebaugh identifies this as the first English translation of the Communist Manifesto. He tells us that:

“The translator was Helen MacFarlane, a Lancashire Chartist, whose choice of words derived from the forest commons -- “Hob” was the name of a country laborer, “goblin” a mischievous sprite. Thus communism manifested itself in the Manifesto in the discourse of the agrarian commons, the substrate of language revealing the imprint of the “clouted shoon” of the 16th century who fought to have all things common. The trajectory from the “commons” to “communism” can be cast as the passage from past to future. For Marx personally it corresponded to his intellectual progress.”

Many things interest me about this translation. The coarseness of the hobgoblin, its association with old forests and mud, its rootedness in agrarian pasts as opposed to modernizing futures, all make it unsuited to the forward-looking revolutionary impulse of the Manifesto, and we can see why it quickly ceded to the specter. The embodied, organic goblin seemed less suited to the future than the wraithlike specter, the latter meaning a visual apparition, drawing on the optical metaphor of the light spectrum. The hobgoblin is trapped in an ancient past of organic matter. The specter shimmers in the promise of the cleanroom.

I want to think a bit further, and in some different directions, about hobgoblins and spectres, and their affiliated temporalities, commons, nature, and technology. (Linebaugh’s comment above is from his book *Magna Carta Manifesto*, in which the chapter “Law of the Jungle” draws heavily on South Asian environmental history. I follow those connections into discussions of nature and law, in the larger work of which this is a piece.)

Derrida too notes the indefiniteness of the spectral wraith – this indefiniteness, we recall, in contrasts with our hobgoblin, which has a characteristic embodiment, experience, and location. Matter to mind, primeval forest to impersonal time and space, these are the very movements of past to future that we might pay attention to as we write the history of technological objects and postcolonial nations.

²⁸ Cited in Peter Linebaugh 2007 (CNS 18:4, p 38)

In *Specters of Marx*, Derrida cites a passage from *The German Ideology* “which puts to work a schema that Capital seems to have constantly confirmed ... the critique of the ghost or of spirits would thus be the critique of a subjective representation and an abstraction, of what happens in the head, of what comes only out of the head ... One may say that this is where the spirit of the Marxist critique situates itself” (171)²⁹

Bliss Lim, in her book *Translating Time*, ponders the intransigent coexistence of specters by thinking about incommensurable times and their remainders. Drawing on the Comaroff’s work on zombie capitalism in South Africa and Dipesh Chakravarty’s *History 1* and *History 2*, Lim explores the negotiation of multiple times, which she describes eloquently as a mixture of immiscible parts; as fractions, tongues, worldings, excessive circulations; discrepant, heterogeneous, lifeworlds and temporalities.

Remainders, residuals, ghosts: for mathematicians, economists, and philosophers, these have been problems to explain away, but in moments of crisis, they are mechanisms of bringing back fragments of meaning formerly discarded.

Drawing inspiration from Lim, the Comaroffs, Linebaugh and Helen Macfarlane, I think we should be open to ghost stories while recounting the histories of technology. While aswangs, zombies, and hobgoblins manifested themselves as representations of the unhappy ghosts of subsumed pasts, in contrast to the ghost-free zone of instrumental action, I would like to explore the ghosted spaces of technology itself. There is no realm of transparent modern; the appearance itself is the conjuration of a haunted object, of present persons haunted by hyper-rational ghosts of a future that never comes. The phantasmatic subjects and objects of technoglobalism must be read via the specters in the machine.

²⁹ “Es spukt: difficult to translate, as we have been saying. It is a question of ghost and haunting, to be sure, but what else? The German idiom seems to name the ghostly return but it names it in a verbal form. The latter does not say that there is some *revenant*, specter, or ghost; it does not say that there is some apparition, *der Spuk*, nor even that it appears, but that “it ghosts,” “it apparitions.” *It is a matter* [il s’agit], in the neutrality of this altogether impersonal verbal form, of something or someone, neither someone nor something, of a “one” that does not act. *It is a matter* rather of the passive movement of an apprehension, of an apprehensive movement ready to welcome, but where? In the head? What is the head before this apprehension that it cannot even contain? And what if the head, which is neither the subject, nor consciousness, nor the ego, nor the brain, were defined first of all by the possibility of such an experience, and by the very thing that it can neither contain, nor delimit, by the indefiniteness of the “es spukt”. (Derrida, *Specters*, 172)

IV CONCLUSION

There are 3 hauntings I trace in the larger work:

1. Ghosts of nature haunt culture.

There are enormous amounts of nature in technology; environmental and technological histories need to be part of the same story.

2. Ghosts of labor, the social relations between “men,” haunt the commodity, make it dance, head up as if there is a real relation between things.³⁰

There are enormous amounts of apparently free labor in the neoliberal economy. What is the relationship between labor, people, and technological things?

3. Pirate ghosts haunt information.

There are enormous amounts of leakage in transnational informational networks -- is this an externality or an intrinsic part of the history of information practices?

Practitioners of techno-science already talk to these ghosts as part of their everyday practice. Intellectuals must practice, and theorize, this double-voicedness. Poor theory is about hobnobbing with ghosts.³¹

Hobgoblins, pirates, and toxic labor currently enter the study of information societies via social scientific concerns about distributional equality, the digital divide, and environmental damage. Terms such as development and the “digital divide” have become shorthand for what is seen as a regrettable, but redressable, unevenness in the distribution

³⁰ Marx, *Capital*.

³¹ Can one, in order to question it, address oneself to a ghost?

... The question deserves perhaps to be put the other way: Could one *address oneself in general* if already some ghost did not come back? If he loves justice at least, the “scholar” of the future, the “intellectual” of tomorrow should learn it and from the ghost. He should learn to live by learning not how to make conversation with the ghost but how to talk with him, with her, how to let them speak or how to give them back speech, even if it is in oneself, in the other, in the other in oneself: they are always *there*, specters, even if they do not exist, even if they are no longer, even if they are not yet. (Derrida, *Specters of Marx*, 174.) Derrida calls attention to a subtle difference in our attitude to hauntings – the difference between exorcising ourselves of ghosts and welcoming them hospitably. Marx, he notes, “knew how to let them [ghosts] go free, emancipate them even, in the movement in which he analyzes the (relative) autonomy of exchange-value, the ideologem, or the fetish. “ (Specters of Marx, 174) But Derrida suggests that “Marx perhaps should not have chased away so many ghosts too quickly.” (174)

of the new global forms of wealth: high-speed connectivity and rapid flows of information and capital. I suggest that we push harder on the assertion of a putative incommensurability between the “high-tech” and the “primitive.” Rather than being radically disjunct, these are mutually constitutive – and this mutual constitution is importantly, but not exhaustively catalogued by descriptions of the modern inequities that continue to characterize postmodern technosciences. The hobgoblins that dance in the heart of Media Lab Asia, the specters that constitute the new technology barons, are part of the story of post-colonial technology. The task is to carry out an analysis of the fantasmatic elements of the new information order, while not losing sight of the political-economic structures and myths that undergird old and new forms of media and technology.

Returning to Lyotard’s sciences of instrumentality and of paralogy, it seems that Science2 and Science1 haunt each other, and both are implicated in the hauntologies of Third World Technological futures.³² These Third World Techno-ghosts are diverse - they still include those struggling with the ancient task of survival, against the predations of empire and capital, but they also include technocrats in suits of networked-armor, wreathed in spectres, daring the past to catch up with them.

³² Hauntology is Derrida’s term. Derrida asks us to think, in the wake of Marx, about what might it mean “to exorcise not in order to chase away the ghosts, but this time to grant them the right, if it means making them come back alive, as *revenants* who would no longer be *revenants*, but as other *arrivants* to whom a hospitable memory or promise must offer welcome – without certainty, ever, that they present themselves as such. Not in order to grant them the right in this sense but out of a concern for justice ... One must constantly remember that it is even on the basis of the terrible possibility of this impossible that justice is desirable: *through* but also *beyond* right and law. (175)