Empire's Metropolis
Money Time & Space in Colonial Bombay, 1870-1930

by

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Submitted to the Program in Science Technology & Society (STS) in Partial Fulfillment of the Requirements for the Degree of Doctor of Philosophy in History, Anthropology and Science Technology & Society (HASTS) at the Massachusetts Institute of Technology (MIT)

SEPTEMBER 2013

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Abstract

The thesis utilises newly available legal and municipal archives to study the historical geography of colonial Bombay through five interlocking themes and periods from 1870-1930. This spans the period between the boom and bust in the cotton trade during and after the American Civil War – when Bombay was a colonial mercantile port – to its emergence as of one of India and Asia's largest industrial cities after the First World War. Separate chapters explore the history of railway and telegraph networks, standardisation and time-keeping, land acquisition and valuation, cadastral surveying and property registration, and the urban built environment. From the perspective of the colonial city, the history of these formations looks less like the smooth unfolding of singular standards of money, time or space, than a protracted war of position fought out across a century by experts, elites and the masses. This thesis seeks to deepen the social and political history of urbanization in South Asia beyond concepts of colonial technology transfer or nationalist resistance by examining the everyday politics of stock and real estate speculation, public clocks, land and private property, maps and topographical surveys, and buildings and streets in colonial Bombay. These "modern" technologies of calculation, coordination and control in the urban environment both created and depended on new scales of power and capital accumulation, or particular configurations of industrial technologies, civic institutions and urban space.

Acknowledgements

Thanks to my advisors Michael M.J. Fischer, Sudipta Kaviraj and Merritt Roe-Smith; my friends and teachers: Nikhil Rao, Eric Lewis Beverley, Svati Shah, Kaushik Bhaumik, Vaishnavi Chandrashekhar, Schuyler Erle, Tim Waters, Matt Knutzen, Josh Greenberg, Dan Cohen, Will Glover, Anupama Rao, Arvind Rajagopal, Gyan Prakash, K. Sivaramakrishnan, Douglas Haynes, Keith Hart and Arjun Appadurai; the late Carol Breckenridge, Rajnarayan Chandavarkar and Hisham Sharabi; in Mumbai: Kamu Iyer, Deepak Rao, G. Nagarjuna, Meena Menon, Vinod Shetty, Anirudh Paul, Prasad Shetty, George Jose, Rahul Srivastava and Sanjay Bhangar; at MIT and Harvard: Hal Abelson, Danny Weitzner, Richard Sennett, Sugata Bose, Sven Beckert, Robb Eason, Benjamin Mako-Hill, Nick Buchanan and Etienne Benson; at STS HQ: Karen Gardner, Judy Spitzer, Kris Kipp, Debbie Meinbresse and Jerry Burke.

All of my archival work was conducted in Mumbai at the Maharashtra State Archives (MSA) and the Municipal Corporation of Greater Mumbai (MCGM), whose staff and officers offered unstinting support to my research, especially Suhash V. Kotkar, Gulabrao Kamble, Shweta Medekar, Chandrashekhar D. Chore, Vasant P. Prabhu, Jyotish Desai, Suprabha Agarwal and Ashok Kharade. For supporting my travel, fieldwork and writing, thanks to the American Institute of Indian Studies (AIIS), MIT Libraries, Harvard University Libraries and the New York Public Library.

Earlier versions of this work were presented between 2008 and 2010 at the MIT HASTS Graduate Student Writing Workshop, the Harvard Political Economy of Modern Capitalism Workshop, the Yale University and Hong Kong University Conference on Urban Ecologies in Asia, and the AIIS Junior Fellows Workshop. Several pages of chapters 5 and 6 are based on review essays published in the *Economic & Political Weekly*, Mumbai: "Micro-History of Mumbai" (Vol. XLV, No.36, 4 September 2010) and "Do Buildings Have Agency?" (Vol. XLVI, No.30, 23 July 2011).

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1. Scales

Gateway of India

Empire's Metropolis: Money Time and Space in Colonial Bombay seeks to disentangle the various scales at which urban power was produced and contested in colonial Bombay. Focussing broadly on money, time and space in Bombay City and Western India, this thesis seeks to deepen the social history of modern cities in South Asia beyond narratives of colonial technology transfer and nationalist historiography by a study of five interlocking themes and periods from 1870-1930.

Empire's Metropolis explores the urban dimensions of standard time, public clocks, landed property, maps and surveying, and the built environment, spanning the period of Bombay's growth from a colonial mercantile port city into a major industrial metropolis from 1870 to 1930. These "modern" practices of calculation, coordination and control in the urban environment both created and depended on new scales of urban power and capital accumulation, made possible what I argue are particular configurations of industrial technologies, civic institutions and urban space.

From the perspective of the colonial city, the history of these technologies looks less like the smooth unfolding of a singular standard of time or space, than a protracted war of position fought out across a century by colonial and national elites and the masses in Bombay. In contrast to the teleology inscribed in "industrialization" or

"urbanization", it is strategic claims and efforts to produce and maintain the scales of urban power and circuits of exchange and control – the multiple and disjunct scales of money, time and space of the city through which the city grows and reproduces itself – that we can locate the historical geography of colonial and postcolonial Bombay.

Historically, cotton was the key commodity through which Bombay emerged as a "gateway city" or "global city" in the modern world economy. Much like today's global cities, the port cities of British India were central nodes in imperial networks of command and control which extended across colonial India. The networked infrastructures completed between 1860 and 1880 – the complex of railways, telegraphs, and steamships – made Bombay a central location in the circulation of people, money and goods through an expanding territorial and maritime frontier in Western India and the Indian Ocean.

Since its first settlement in the 17th century, the small archipelago of islands and swamps in the natural harbour of Bombay had remained separated from its hinterland by the coastal mountains of the Western Ghats. These sparsely populated set of seven islands were ceded to the Portugese in the seventeenth century. Through the marriage dowry of Catherine Braganza when she married into the British royal family, Bombay ceded to the British Crown. The Crown, in turn, rented the swampy

station to the East India Company, who maintained a military and trading establishment there in the eighteenth century.

As the main outpost of the Company's power on the west coast of India, Bombay's influence deepened with the increasing control exerted over coastal trade by the Company's naval protection and commercial shipping, which diverted earlier patterns of Indian Ocean commerce centred on the Mughal port city of Surat, through the projection of military and commercial power from Bombay. Throughout the eighteenth century, Bombay as a centre of British mercantile power remained vulnerable to attack, from the mainland, ruled by the Marathas and from the coast, dominated by various chiefs and pirates of the Konkan, who surrounded the harbour outpost and menaced the shipping lines of the Bombay Marine, the Company's protection racket for native shipping and trade in the western Indian Ocean.

In contrast to the imperial capital at Calcutta – a colonial port city on the eastern coast of India and capital of Bengal, controlled by the Company since the eighteenth century – the relationship of the Company with Indian traders, merchants and businessmen whom it encouraged to settle and trade in Bombay was central to the viability of the settlement as a commercial and military outpost in western India. Isolated from its hinterland and vulnerable to the mainland power – but ruling the seas and offering privileges of trade and escort – Indian merchants and traders, from the Parsi, Bhatia and other communities in Gujarat, began to set up shop in Bombay. They grew rich quickly with the protection and patronage of British power, first in

ship-building and later in the profitable opium trade with China, which was managed by the Company through its purchases of tea and remittances of silver to England.

The colonial state was often helpless to control the supply of the opium crop at its sources in Malwa and Bihar, which were controlled by Indian traders and middlemen who subverted the official auction prices of opium chests, fixed and controlled by the British Indian Government in Calcutta, by selling in the less regulated ports and markets of Western India and Bombay.

The great port cities of British India – Bombay, Madras and the imperial capital Calcutta – while seats of command and control, were themselves dominated by Indian merchants and traders, and state power was often contested by these groups within the city, nowhere more so than in Bombay, where merchant elites worked closely with the British rulers keen to maintain the swamp station's potential for trade in Western India. The spatial projection of East India Company's power in the coastal waters and high seas of the western Indian Ocean in the late eighteenth century, and its military successes in toppling native states and absorbing new territories, often contrasted with its inability to control and dominate local and coastal commerce and trade within Bombay, where the loyalty and custom of Indian businessmen was the condition of colonial economic and political hegemony.

This changed over the course of the nineteenth century with the expansion of British power in western India through warfare, annexation, and settlement of the coastal and mainland territories surrounding the city and harbour. With the final defeat of

the mainland power in the Anglo-Maratha war of 1819, there was a rapid expansion of colonial administration through the land and revenue settlements of the newly conquered lands of the Bombay Presidency under Lord Elphinstone, the first British Governor of the Presidency, and the spread of new road, telegraph and finally railway networks in the 1850s and 1860s connected the port city with the hinterlands of the new colonial province through causeways and bridges.

Both the modern geography of the city and the balance of power between its communities had already been formed in the context of the earlier by the time the first major links with the mainland were completed in the 1860 and 1870s. The emergence of a class of Indian merchant princes from the profits they made in the opium trade with China since the 1820s further distinguished Bombay from Calcutta as a colonial port city, where business and capital was owned and controlled mostly by British and Scottish traders[1].

The growth of an Indian capitalist bourgeoisie comprised of Parsis, Gujaratis, Marwaris, Khojas, and other migrant communities to Bombay, first in opium and later in the trade of raw cotton during the American Civil War and the Lancashire "cotton famine", has been commented upon by numerous historians of colonial India[2]. In the conventional account, these Indian business communities went from "traders to industrialists", laying the foundations of modern industry in India by

[1] Claude Markovits, "Bombay as a Business Centre in the Colonial Period: A Comparison with Calcutta," in Bombay: Metaphor for Modern India (Bombay: Oxford University Press, 1996), 26-46.

shifting their entrepreneurial activities from the trade of raw cotton to the manufacture of textiles by investing in mechanised spinning and weaving mills, which first appeared in Bombay in the 1870s. What is important to note about this debate on the emergence of a Indian capitalist elite in Bombay is the political and business strategies of these elites who worked *both* within *and* against colonial power[3].

From the 1870s, the city became the central conduit for the global cotton trade and its hinterland an expanding frontier for extending cotton cultivation and marketing textiles within the British Indian Empire. Bombay had been a trading port since the eighteenth century, and by the mid-nineteenth century its merchant princes were operating a prosperous trade in opium which violated the East India Company's lucrative monopoly on sales from Calcutta, the seat of their government in the east of the country. By contrast with the Company's effective monopoly purchase and regulated auction of opium to trading companies and agencies in the China trade, the opium trade from Bombay was operated by independent traders who sold outside the Company's monopoly[4].

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2 Christine Dobbin, *Urban Leadership in Western India: Politics and Communities in Bombay City, 1840-1885* (London: Oxford University Press, 1972).

3 Rajnarayan Chandavarkar, *The Origins of Industrial Capitalism in India : Business Strategies and the Working Classes in Bombay, 1900-1940* (Cambridge, UK: Cambridge University Press, 1994).

4 Amar Farooqui and Three Essays Press, *Opium City: The Making of Early Victorian Bombay* (Gurgaon: Three Essays Collective, 2006).

Following the boom and bust of cotton shares and the birth of the factory-based textile industry in the city, its expanding internal frontier in the cotton-growing areas of western and central India was paralleled by the growth of an larger inter-regional arena in its vast maritime frontier, the western Indian Ocean. Bombay's protective role in the western Indian Ocean rarely extended to direct colonisation – its dominance was similar to the regime of indirect colonial rule in the Indian princely states and tribal agencies. Traditionally, for merchant empires in the Indian Ocean, commerce was intertwined sovereignty[5]. Bombay's early growth was directed both by colonial capital and by merchant communities who possessed the unique skills and expertise to operate on the new scales of accumulation opened by colonial industrial technologies over the 19th century[6].

The British imperial power to harness, direct and regulate flows of people, money, weapons and machinery from above allowed regional urban networks of ports cities to flourish through the activities of Indian, Persian, Arab and other diasporic merchants and businessmen, for whom Bombay was the key commercial gateway to western India as well as East Africa, the Persian Gulf, and Egypt. Indian businessmen were largely excluded from the "commanding heights" of commerce opened by the scale of Britain's imperial world market, especially the import-export trade with

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5 Sanjay Subrahmanyam, *Merchants, markets and the state in early modern India* (New Delhi: Oxford University Press, 1990).

6 Rajat Kanta Ray, "Asian captial in the age of European domination: The rise of the bazaar 1800-1914," *Modern Asian Studies* 29, no. 3 (1995): 449.

Britain. However, in the inter-regional arena of the Indian Ocean[7], their traditional mercantile dominance[8] was enhanced as Bombay entrepreneurs worked as intermediaries in the new peripheries opened by railways, steamships and telegraphs in the city's maritime and coastal hinterlands, building on a longer history of Indian mobile merchant diasporas[9], who facilitated indirect rule in British India's Gulf agencies and residencies and "sub-imperialism" in the Indian Ocean[10].

The business strategies of Bombay merchants structured a new urban hierarchy between the city and its maritime frontiers. Bombay's hinterland was constantly expanding based on its commercial dominance, and the great port city sat astride a sphere of influence in which it commanded and controlled often contradictory flows of merchant capital, military influence, labour and commodities. The development of the railways and textile industry spread the regime of wage labour, clock work, and time discipline throughout the city and its hinterland, which urbanised rapidly in the late nineteenth century through the boom in raw cotton, the migration of mill workers and the growth of the factory system.

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7 Sugata Bose, *A Hundred Horizons: The Indian Ocean in the Age of Global Empire* (Cambridge Mass: Harvard University Press, 2009).

8 Lakshmi Subramanian, *Indigenous capital and imperial expansion: Bombay, Surat, and the West Coast* (New Delhi: Oxford University Press, 1996).

9 Claude Markovits, *The global world of Indian merchants, 1750-1947 : traders of Sind from Bukhara to Panama* (New York: Cambridge University Press, 2000).

10 Thomas Metcalf, *Imperial connections : India in the Indian Ocean arena, 1860-1920* (Berkeley: University of California Press, 2007).

Historians have shown that mechanized mass production in Bombay did not arise from a preordained teleology[11], but was the strategic outcome of Indian business attempts to resist subordination in the export trade in raw cotton after 1865. The business strategies of local Indian merchant elites dictated the path of technological change, challenging the determinism which dominates work on imperialism and "technology transfer"[12]. After the crash, the thrust of new railways into the upcountry cotton tracts, the opening of the steamship routes and submarine telegraph cable links with London via the Suez Canal dramatically restructured the opportunities available to Indian business groups based in Bombay.

In this view, socio-technical change is not part of an inevitable teleology of class formation or technology transfer. Rather, the origins of industrialisation in colonial India lies in the strategy of Indian businessmen and traders to survive and compete against British and European managing agencies who dominated the raw cotton export trade by the 1860s. Foreign firms, with their control over long-distance communication, were better able to manage trade with markets in Liverpool through their own agents and privileged access to government in India and Britain. In response, Indian traders exploited their competitive advantage in sourcing raw cotton upcountry and began to compete for the local market, which by the mid-nineteenth

1 1 Merritt Smith, *Does Technology Drive History? : the Dilemma of Technological Determinism* (Cambridge Mass.: MIT Press, 1994).

1 2 Daniel R. Headrick, *The Tentacles of Progress: Technology Transfer in the Age of Imperialism* (New York: Oxford University Press, 1988); Michael Adas, *Machines as the Measure of Men: Science, Technology, and Ideologies of* (Cornell University Press, 1989).

century had been flooded with imported manufactures from Manchester. Modern technologies of cotton spinning and weaving were introduced in this effort to resist subordination of colonial capital through the development of an indigenous textile industry by Indian capitalists[13].

In stages from the 1870s onwards, Bombay's modern geography was formed through land reclamations which drained the swamps and filled the flats between the seven islands in the harbour, composing the Island City which became the core of the modern metropolis whose shape and form are recognisable today. In the mid-1860s, Governor Bartle Frere dismantled the walls of the old Bombay Fort, which housed the Castle (with its Time Ball), Stock Exchange, the Secretariat and numerous other offices and establishments. From the 1870s, the textile mill industry and working-class settlements grew rapidly in the lands adjacent to the overcrowded and older Indian settlements in the Native Town, and north of the former islands of Colaba and Bombay – which sported an increasingly visible and imposing neo-Gothic edifice in the form of new imperial monuments, boulevards and public buildings. By the first decade of of the twentieth century, this Island City, styled by its European and Indian civic elites as the *urbs prima in Indis* and the "Gateway of India", had

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1 3 Rajnarayan Chandavarkar, "Industrialization in India before 1947: Conventional Approaches and Alternative Perspectives," in Imperial Power and Popular Politics: Class, Resistance and the State in India, 1850-1950 (Cambridge, England: Cambridge University Press, 1998), 30-73.

become home to more than a million people, one the the world's foremost industrial cities and largest metropolises in the British Empire and Asia.

Share Mania, 1862-1969

> It was about the beginning of the great speculation mania that set in in Bombay in 1862-63 – a mania beside which, I believe, if facts and figures were compared, the South Sea Scheme would sink into insignificance – that the loafer came to the front. How many are alive still to remember those silver times? When Reclamation schemes turned every body's brain – when "Back Bays" fluctuated between twenty and forty-five thousand rupees premium – [...] – when there was a new Bank or a new "Financial" almost every day – when it was a common thing, in strolling from your office to the dear old Indian Navy Club, to stop a moment in the seething Share Market and ask your broker, "well, Mr B. or Bomanji! what's doing" "Oh sir! So-and-so Financials are rising – they say Premchand is buying". "Ah! well, just but me fifty or a hundred shares" (as your inclination prompted you). [...]
>
> Why does not some abler pen than mine give an historical account of this great mania? When fortunes were made and lost in a few days; when the fatal telegram came announcing the peace between the North and South American States, and all our houses of cards came tumbling down about our ears, – when Back Bays (of which I was the happy possessor of one) rose to half a lakh premium, – when "allotments" were sent to you "willy-nilly", mostly worth some money, – when poor Doctor D. and Mr T. were millionaires on paper! Many a pathetic story could be related of those times, and of the awful crisis afterwards.

Arthur Travers Crawford, *Reminisces of an Anglo-Indian Police Official* (1894), pp.242-244

The outbreak of the the American Civil War in 1861 suspended shipment of raw cotton from Confederate plantations to the textile mills of Manchester, prompting a worldwide supply crisis with profound effects on Western India. The rise of Bombay within the empire of "King Cotton" is located in this global "cotton famine"[14]. From 1863-65 the market for short-staple Indian cotton soared, prompting a "share mania" in Bombay's banks and markets. Suddenly awash in capital, a frenzy of speculative investment, share trading and futures contracts overtook investors, promoters and officialdom. The explosive growth of the raw cotton trade in western India during this period was the context for the formation of the first modern stock exchanges in the Bombay, closely drawing together foreign capitalists and speculators with indigenous bankers, merchants and middlemen. The money generated in those years reveals what I argue is a key nexus in the history of the city as a set of interconnected social and technical practices – the particular configuration of *industrial technologies*, *civic institutions* and *urban space*.

The engineering and development of the modern Island City of Bombay through the "share mania", as urban lands were reclaimed for new port and docklands, railway and transportation lines projected into the cotton-growing hinterlands from the city, and the responses of businessmen, bankers and the colonial state to its collapse of

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1 4 Sven Beckert, "Emancipation and Empire: Reconstructing the Worldwide Web of Cotton Production in the Age of the American Civil War," *The American Historical Review* 109, no. 5 (December 2004).

trade and speculation after the surrender of the Confederate States in 1865, reveals the complex political economy of the world's first organised manufacturing industry, cotton textiles. At the centre of the share mania was Gujarati trader Premchand Roychand, on whose word and reputation depended numerous companies in cotton exporting and urban land reclamation. Bombay emerged as a primary circuit in the global accumulation of cotton capital through the agency of Indian merchants who transmuted cotton from raw crop to abstract commodity through business strategies on global markets[15].

More than a national conflict, the war constituted a global event and crisis for the nineteenth century world economy, centred on Victorian Britain and its Empire. The ascendancy of industrial Lancashire as the world's workshop and Manchester at the heart of its mechanised textile industry was founded both on the immiserated workers crowding Engel's Manchester, but also the steady supply of raw cotton harvested by the slave labourers on the plantations of the American South, and the subjugated peasant smallholders of western and central India. The Union Navy's blockade of Confederate ports in the South threatened a crisis in Manchester for which the Britain's Indian Empire was called upon to provide new supplies of raw cotton, propelling Bombay City and its satellite regions of western and central India into the nineteenth century mercantile economy through colonial conquest of the

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1 5 Radhe Shyam Rungta, *The rise of business corporations in India, 1851-1900* (London: Cambridge University Press, 1970); Dwijendra Tripathi, *Business houses in western India : a study in entrepreneurial response, 1850-1956* (New Delhi: Manohar Publications, 1990).

urban hinterland, extension of cotton cultivation, the emergence of the city as the emporium and clearing house for Indian cotton in the British imperial economy.

The efforts of Lancashire textile barons to diversify their supplies and look to India for an alternative to dependence on American cotton preceded the American Civil War. Through the 1850s and 1860s new technologies of experimental cotton cultivation were promoted by private initiatives and official programs to develop and promote mechanised cotton ginning and pressing, and later spinning and weaving, both in the hinterland cotton districts and in the depots and weighing stations in the colonial city[16]. However, prior attempts at promoting and extending cultivation of cotton in India to meet the needs of Lancashire had faltered in the face of the *laissez faire* attitudes of the ruling Company – whose parsimony in extending official support to private initiatives throughout the 1850s to transplant and cultivate New Orleans cotton in central India were bemoaned by enthusiastic British promoters.

During the boom, the proliferation of managing agencies and joint-stock companies gave birth to the modern corporate private sector in Bombay. This form, first introduced into British India through the guaranteed railway company as "private gain at public risk", was again shown to be ruinous to colonial public affairs and finances in the wake of the cotton crash. The crisis in the banking and financial sector in the 1860s which engulfed the city also took down the finances of the colonial state

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1 6 Peter Harnetty, *Imperialism and Free Trade: Lancashire and India in the Mid-nineteenth Century.* (Vancouver: University of British Columbia Press, 1972).

through the Bank of Bombay, revealing their precarious dependence on indigenous money and credit markets, and Indian merchant capitalists such as Premchand Roychand.

Social historians have demonstrated how indigenous merchants and bankers were decisive in the rise and expansion of early colonial power and the 1863-5 share mania shows that banks and "bazaars" were deeply interconnected well into the 19th century[17]. While the colonial state attempted to curb speculation by prohibiting its officials from private trading and de-linking the silver rupee from the issue of paper currency, the end of the American Civil War triggered the meltdown of Bombay's share market, along with state finances and civic institutions. In the royal commission inquiry into the failure of the Bank of Bombay, Premchand and other Indian traders were vilified for instigating the boom and bust, but these sources also reveal the interdependency of the colonial state and Indian capital in Bombay.

The political and fiscal reforms instituted in the wake of the crisis laid the institutional foundations for the modern capitalist city and a new civic order, and a particular relationship between classes and the state in colonial Bombay, which was significantly different from other colonial port cities in India or the rest of the Empire. In the 1870-80s, systems of banking and share trading were restructured, and political and economic institutions reformed in the wake of the crisis.

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1 7 C.A. Bayly, *Rulers, townsmen, and bazaars: North Indian society in the age of British expansion, 1770-1870* (New York: Cambridge University Press, 1983).

The Municipal Corporation, the Bank of Bombay, and the Port Trust, were either entirely reformed, or created anew in the 1870s from public and private institutions which were shattered by crisis, such as land reclamation companies, financial associations, and private banks. With the collapse of the earlier generation of institutions inspired by a laissez-faire attitude to land, money and labour, the colonial state formations of the period following the 1860s were marked by a decisively more interventionist attitude towards the management of commercial and civic affairs in Bombay, as well as their politicisation by a new native elite of merchants, bankers, cotton traders, and their colonial business colleagues into the 1880s. In this new civic order, Indian capitalists shifted from trading raw cotton to industrial spinning and weaving in their new textile mills – cornering the vast local market for manufactured piece-goods heretofore dominated by Manchester.

While the earlier cosy relations between business and the state in Bombay was a feature of Victorian society and colonial India more generally, Bombay's business history and merchant culture marked a crucial difference with Calcutta, the seat of the colonial government and the commercial capital of eastern India. Bombay's indigenous elite, and especially business communities such as the Parsis, Hindu and Muslim Gujaratis form a capitalist class relatively autonomous of the foreign colonial elite and therefore able to make their presence felt in the politics of the city. The leadership of Bombay businessmen, politicians, and professionals in nationalist politics in the early twentieth century had its roots in the colonial civic associations

and limited municipal franchise of the nineteenth century. The strategies of indigenous merchants and entrepreneurs in the wake of the crash to resist their subordination to the requirements of Lancashire for raw cotton resulted in the development of the mechanised textile industry in Bombay and the origins of industrial capitalism in colonial India, and the rise of an Indian urban bourgeoisie.

It was from the urban corridors of commercial and financial power that networks of telegraphs, railways, and steam navigation were financed and built to connect far-flung territories and polities in the cotton economy – money markets and supply chains were connected in a newly compressed time and space. Much like today's global cities, in the late nineteenth century context of global empire and commodity flows, the "Cottonopolis" was a centre of financial and technological power – though, like today, its authority was often unstable, and revealed its vulnerable character in moments of crisis. Both globalisation and imperialism have been with us a long time, and their forms are being disinterred from nearly a century of state-centric politics and historiography. In the nineties, the renewed interest in the novel dynamics of economic globalisation often obscured the extent to which the world economy was an interconnected web before the rise and fall of the nation-state in the twentieth century. My project seeks to recover the history of colonial Bombay as part of this wider history of capitalist globalisation.

The crisis it prompted within the British Empire by the American War, as Manchester merchants and their supporters in London sought to come to terms with the problem of secure and regular supply of raw cotton, form an unusual conjuncture in the global history of Victorian Britain and India. The crisis from 1861-65 and its aftermath prompted widespread transformation in the British imperial economy. Due to the disruption of cotton trade from the American South, Bombay emerged as the gateway city and commercial capital of western India and the British Raj, due to its commanding role in the trade, finance and marketing of raw cotton from its hinterland regions in western and central India – the key input for the British textile industry in Lancashire. The global conjuncture in which Bombay's industrialisation took place is the site of this inquiry into the origins of the city as socio-technical complex in Western India.

The city and its dependent regions in western and central India were recruited into the global trade in raw cotton the mid-nineteenth century, and how the "cotton famine" in Lancashire during the Civil War forced Manchester industrialists to look from the American South to colonial India for alternative supply, propelling a "share mania" on the city's stock exchanges and banks, consolidating the position of Bombay merchants and bankers in global commercial and trading networks, and propelling the city towards mass urbanisation and industrialisation by the late nineteenth century, when Bombay became the centre of one of the largest textile industries in Asia.

At the global level, the extraction of cotton as raw material was the primary instrument of colonial agrarian exploitation, and manufactured textiles as imported commodities were the main product which sustained colonial consumer dependence. In this context, the emergence of a cotton textile industry in India in the wake of the crisis was a key development in the history of colonial capitalism and the world economy in the nineteenth century. At the regional level, Bombay and western India emerged amongst other industrial city-regions as one of the premier markets in the global empire of cotton and textiles. At the local or urban level, the historical geography of Bombay was formed in this conjuncture, and the city as socio-technical complex in turn structured the relations between the global textile trade and its hinterland cotton suppliers.

Global & Gateway Cities

Global commodity and financial markets have repeatedly and dramatically demonstrated the interconnected nature of financial flows in modern economies. These connections are most apparent, and – in the moment of their crises – often most vulnerable within the cities and metropolitan areas where worldwide financial and producer services are disproportionately concentrated. Today's global cities, whose wealth and power alone surpass those of most nation-states, house the financial institutions, banks and exchanges, as well as the other infrastructure of command and control of late modern finance capital and corporate globalisation.

These global cities are by definition both externally powerful centres of command and control in the global economy, as well as internally unstable agglomerations of people, money and machines. Saskia Sassen, in her classic study of the *Global City: New York, London, Tokyo*, has made influential contributions to understanding the contemporary dynamics of scale-making in the interconnected global economy, specifically focussing her research on the concentration of financial and producer service industries in these three large cities, which her theory of the "global city" describes as key centres in the flows of global capital, whose management demands concentration of financial and producer services.

For Sassen, scale is an achievement of this clustering of firms, agencies and authorities charged with the functional "command and control" of global production and capital flows. She classifies global cities as those which can afford to continue hosting operations critical to upholding the scale of investment, coordination, and expansion of global multinational capital in its far-flung locations. Sassen has posited as a point of departure the combination of spatial dispersal of manufacturing and the global integration of services and finance which "has created a new strategic role for major cities". Her study of the parallel changes in the economic base, spatial organisation and social structure of London, New York and Tokyo asks how cities with such different histories and cultures could experience such a similar transformation in a relatively short period of time. "To understand the puzzle of parallel change in diverse cities requires not simply a point-by-point comparison of

New York, London, and Tokyo, but a situating of these cities in a set of global processes", examining how different cities have responded to the same dynamic.

A failure to reproduce this global-urban scale of accumulation, or limits on these scale-making activities by local actors such as city governments or regional authorities, can cause these crucial activities to move elsewhere where their freedom or operation is less restricted or offered better accommodations in dedicated enclaves such as the London Docklands or Lower Manhattan. The demands of global marketing for investment and inter-urban competition has prompted the self-identification by elites in Delhi and Mumbai as "global cities" on a par with other emerging centres such as Hong Kong, Singapore and Shanghai.

Recent anthropologies of globalisation and cities have highlighted the importance of locality: how the abstract space of global capital is made into living places by people, through their search for livelihood and their struggles for survival in the complex daily calculus of money, time and space. The recent literature on global cities, unlike the earlier research on the post-industrial society, has taken seriously the *particular location* of cities like Mumbai in the process of the production of space of global capital. Sassen warned that "the term global city may be reductive and misleading if it suggests that cities are mere outcomes of a global economic machine. They are specific places whose spaces, internal dynamics, and social structure matter; indeed,

we may be able to understand the global order only by analysing why key structures of the world economy are *necessarily* situated in cities".[18]

Cronon's *Nature's Metropolis* is an historical account of the creation of these urban scales of accumulation, based on the work of Johann Von Thunen – whose idea of "friction at a distance" was the most influential way of understanding the spatiality of social formations in social science. Von Thunen's conceptualised urban scales of expansion in terms of the ability of a centre to act on its periphery, which diminishes in direct proportion to physical distance. Von Thunen's generic city was located in centre of an abstract space which he called "The Isolated State":

> Imagine a very large town, at the centre of a fertile plain which is crossed by no navigable river or canal. Throughout the plain the soil is capable of cultivation and of the same fertility. Far from the town, the plain turns into an uncultivated wilderness which cuts off all communications between this State and the outside world. There are no other towns on the plain. The central must town must therefore supply the rural areas with all manufactured products, and in return it will obtain all its provisions from the surrounding countryside. The mines that provide the State with salt and metals are near the central town which, as it is the only one, we shall in future call simply "the Town".[19]

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1 8 Saskia Sassen, *The Global City: New York, London and Tokyo*, Princeton: Princeton University Press, 1991, pp.3-4

1 9 Johann Heinrich von Thünen, *Isolated State; an English Edition of Der Isolierte Staat*, 1st ed. (Oxford: Pergamon Press, 1966).

Von Thunen's portrayal of this ideal type of urban settlement was directed towards a theory of agricultural economics which allowed for the calculation of the diminishing price of agricultural commodities in relation to their distance from the town centre, as well as related spatial effects of this distance-based friction exerting influence on ground rents and location of markets and transport.

The Chicago School of urban sociology of the early twentieth century city followed on the work of social commentators in the era of "large-scale" industry from Engels and Marx to Durkheim and Simmel who sought to unravel the differential and uneven geography of the industrial city and its increasingly complex spatial division of labour, as well as the effects on the individual psyche of these sweeping changes in urban society which connected previously isolated "island communities" in a structure of interdependency which undermined earlier moral and political solidarities based on the local or community scales of social relations and demanded new forms of explanation. Urban studies and geography today still bears the impress of the programmatic agenda of by Robert Park, Louis Wirth and Roderick MacKenzie, influenced by their method of urban "social ecology" which took a keen interest in the local forms of habitation, consumption, and settlement in the urban ghettoes and migrant slums of Chicago in the 1920s and 1930s. Their eclectic origins in demographers, geographers and sociologists was formalized into a quasi-scientific

sociological method for studying the growth of urban communities at ever increasing scales[20].

The city was seen by Robert Park and Roderick MacKenzie as a interconnected system and single field of inquiry for urban processes such as ethnic identity formation, criminality and deviance, new leisure and social activities, as well as studies of migrant neighbourhoods, the urban ecologists explored the new scales of urban case studies within an urban ecology that was seen as natural and self-evident plant and animal biology from which their method was inspired. This new method of urban sociology produced some of the great studies of local urban life such as W.F. Whyte's *Street Corner Society* and significant studies of the new "commissioner" and "public authority" forms of city government and inter-group politics in the urban context – thus inaugurating modern urban sociology as we recognize it today – the Chicago ecologists recognized spatiality but often failed to inquire into the wider production of the urban form which sustained the new scales of social and economic life which their ethnographies captured in such stunning detail.

The driving concern of the Chicago School was with understanding the dynamics of urban expansion, of city growth characterized not just as aggregation of population but its *expansion*. The ecologists sought to understand the "metabolism" of the city based on a dialectic of social "organization" and "disorganization" regulated by

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20 Roderick D.; Park McKenzie and McKenzie, Roderick D.; Park, Robert Ezra; Burgess, Ernest Watson, *The City* (Chicago: University of Chicago Press, 1967).

natural equilibrium. "How far is the growth of the city, in its physical and technical aspects, matched by a natural but adequate readjustment in the social organization?" "In what way are individuals incorporated into the life of a city? By what process does a person become an organic part of his society?" Physical expansion of the city took the now-paradigmatic form of the concentric zone model, which the Chicago School most likely borrowed from von Thunen's model of the Isolated State. The primary locus of these studies was the inner-city of Chicago. Indeed the idea of "community" and its spatial and social formations was central to their new sociology of the city – "as a physical fact... as a social phenomenon and as a state of mind."[21]

The Chicago School both grasped how scale is produced and reproduced while naturalizing this scale into a social-physical artefact. This three-part distinction of physical, social and mental spaces in Louis Wirth suggests a "trialectics"[22] in the formation of urban communities, though many of the empirical studies of the Chicago School demonstrated a more determinist view of the physical over the mental or social life of communities – indeed mental and social were collapsed into the "physical base of social life". Naturalising the urban environment (like their predecessors in plant and animal biology who sought to empirically document the manifestations of "natural" life, the Chicago school saw the overall city as an organism with its own natural equilibrium, and their sociology would document

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2 1 Wirth and McKenzie in ibid.

2 2 Edward Soja, *Thirdspace: Journeys to Los Angeles and Other Real-and-imagined Places* (Cambridge Mass.: Blackwell, 1996).

social forms as aberrations from this state of nature, rather than explain them as the outcome of the growing technological and social scales of interdependency of the industrial city. While its theoretical foundations in plant and animal ecology and its physical determinism today appear outmoded, the durability of its practical concepts for making sense of the urban environment is truly remarkable.

Its Chicago founders evangelized human ecology as a method for understanding urban metabolism, but did not see their new discipline as a solely theoretical preoccupation – the results of the new urban research were meant to give a scientific basis to the work of urban planners, economists, municipal policy makers and social workers who were all dealing with the practical consequences of rapid urbanization, from providing civic services to integrating immigrants to annexing new lands to an expanding conurbation.

The ecological theories and models of the city advanced by urban sociologists and planners both gave meaning to this expanding surface and advanced agendas for research and intervention in the urban environment. Maps and theories of urbanization both express this anxiety and tendency to crisis as well as stabilize society as a spatial formation through centering its object in a faithful and convincing depiction of territorial, political, historical and natural features – the "double illusion" of opacity and transparency which enrols the observer and centers the map in a reciprocal dualism of mental and physical space[23]. The Chicago ecologists, closely

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2 3 Henri Lefebvre, *Henri Lefebvre : Key Writings* (New York: Continuum, 2003).

attentive to community studies in line with their reformist ethic of uplifting deviant and integrating migrant citizens into proper urban citizenship, regarded the city as a collection of microcosms scaling up into an urban ecology. The ideas of the ghetto, inner city, and central business district, the spatial formation of urban subcultures, ethnic communities and immigrant neighbourhoods, and the now common-sense notion of the concentric circles or zones from a central place are its lasting contributions to the study of urban scale and the time and space of modern urban life.

In *Nature's Metropolis*, William Cronon's specifies and gives a history of von Thunen's conceptual-spatial model of urban centrality with an account of new urban and regional scales in the American Midwest, showing how Chicago's location as a "central place" or "gateway city" was articulated with its agrarian hinterland through a socio-technical assembly of grain elevators, stock and lumber yards tied to urban financial markets for these goods traded globally. This inseparable continuum between the "city" as an object with its "hinterlands" demonstrates the formation of the modern city is part of a reciprocal genesis of town and hinterland in which the land, labour, and products of its surrounding environment are subsumed into market economies centered on the large industrial cities and subordinated to the centralising logic of railway networks, commodity markets, and other technologies and practices by which the natural environment is transformed into an urban market. Cronon

continually returns to the dialectic of "first nature" natural geography of the Midwestern prairies and forests around Chicago, and the "second nature" human geography of commodity markets, technological innovations and capitalist circuits of exchange and accumulation centered in the metropolis[24].

Cronon's theory of urban scale specifies these notions of place and distance with a theory of how the city and countryside were co-produced in a continuum which depended on the production and finance of grain, meat and lumber in the frontier hinterlands of the city. The centrality of Chicago as "gateway city" for Cronon is the concrete achievement of Chicago's urban capitalists and civic boosters who actively worked to build this scale and maintain it in the face of protests by farmers forced into these obligatory "points of passage" through the new transportation and commercial networks centralized in the Union Stockyard or Board of Trade – as well as in the face of inter-urban competition from rival centers like New York and St Louis.

Urbanisation is a process of disjunct scales and illusions of abstract space, nowhere more so than in the rapidly growing and global cities of South Asia such as Mumbai. The "scale-dependency" of postcolonial urbanization requires new ways of thinking through the contested environments of the Indian city and the production of space in

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[24] William Cronon, *Nature's Metropolis: Chicago and the Great West*. New York: W.W. Norton and Company, 1991.

urban South Asia. Critical geography and the global history of actor-networks working across distances help us excavate and disentangle the interlocking and overlapping scales through which urban power is constituted.

"Urbanization" and "globalization" – just like "modernization" or "industrialization" – are historically contingent sets of processes whose concrete histories remain to be connected back to a wider history of capitalist globalisation in cities which both precede and follow the nation-state. Today most of us live within a world of dramatically reorganized scales, whose political and historical complexity are simplified into the everyday calculus of money, time and space. These standardised vectors of daily urban experience – the smooth surfaces produced by capital, what Lefebrve called abstract space[25] – reorient both distance and proximity in the apparent "annihilation" of space and time by capital (or money)[26]. My history of colonial technologies – from longitudinal determination to cadastral surveying to urban planning – will attempt to show how these technologies transformed the modern city through the abstraction of money, time and space into new circuits of power and scales of accumulation on the one hand, and the reproduction of this power through particular configurations of modern technologies, civic institutions and urban space.

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2 5 Henri Lefebvre, *The Production of Space* (Oxford OX UK;;Cambridge Mass. USA: Blackwell, 1991).

2 6 Marshall Berman, *All That Is Solid Melts into Air: The Experience of Modernity* (New York, N.Y., U.S.A.: Viking Penguin, 1988).

2. Networks

Time-Keeping Networks

Modern clocks and universal standard time signify two of the great historical movements in the nineteenth century – the industrial revolution and global imperialism – both of which harnessed scientific bureaucracy to the task of unifying control of lands previously conceived of as separate spaces and times. From the 1840s to 1860s, through the factory system, industrialisation rendered urgent the coordination of movements of people and products across vast territories opened up by the the railway and telegraph networks which radiated out from the factories, offices and stations in the new industrial towns.

These new technologies annihilated space and time through their increased velocity of transport and transmission. It also annexed them into a single vector of control through their abstraction from particular places and local times, with time and space expressing each other through their common determination in longitude. The famous temporal proverb that the sun never set on the British Empire was most dramatically illustrated by the spatial facts of late nineteenth century cartography. On the map of the modern world, there was a continuous swathe of British-controlled territory – usually coloured red – intersecting every territorial meridian in North America, Africa, the Middle East and Asia.

Johannes Fabian has argued for how ethnographic writing and anthropological science constructs its object through a permanent temporal difference that denied the ruler and the subject were coeval, that they existed in common social time[27]. The history of clock time in colonial India, and what came to be called "Bombay Time", presents a historical twist to this mode of ethnographic authority. Commercial and political elites in Indian cities defied British attempts to legislate and institute railway mean time and Indian Standard Time (IST) across the subcontinent, defiantly maintaining local solar times in the cities, most famously in the "second city of the Empire", Bombay, the gateway city for colonial capital, trade and industry in western India. "Bombay Time" became an everyday fact of temporal difference from the coloniser, as well as a signifier for the autonomous lifeworlds of the colonised population, which, as their leaders would have it, were opposed to Indian Standard Time for important social, religious and eventually political reasons.

Clock time was therefore a powerful instrument for nationalist politicians make a connection between the inner domain of domestic and social labour, to the outer domain of statecraft and the organisation of production[28]. "Bombay Time" signified both a literal temporal difference between coloniser and colonised in the keeping of

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2 7 Johannes Fabian, *Time and the Other: How Anthropology Makes Its Object* (New York: Columbia University Press, 2002).

2 8 Partha Chatterjee, *Nationalist Thought and the Colonial World: a Derivative Discourse?* (London: Zed Books for the United Nations University, 1986) and *The Nation and Its Fragments: Colonial and Postcolonial Histories* (Princeton N.J.: Princeton University Press, 1993).

local time in protest against standardisation, as well as implicit social and political difference for native elites and society in Bombay City and its hinterland regions in western India in the late nineteenth and early twentieth centuries.

The self-evident nature of clock time today – its absolutely routine and normal inscription in every aspect of modern life – conceals the global revolution achieved in everyday practices of telling and keeping time, and wider regimes of time-based discipline since the nineteenth century. The new technology rendered time into a function of territorial control, by unifying clock time within a territory through the hourly time zone, and aligning these twenty four zones into a global system of meridians centered on the imperial capital, at the Royal Observatory at Greenwich.

In 1904-1905, the Royal Society in London recommended to the British Government of India the adoption of Indian standard time in exact hourly relation to the Prime Meridian Greenwich by six hours in the east of India, and five hours in the west, dividing the country into two time zones at different longitudes. The suggestion, despite its superior scientific rationale, was dismissed by the colonial government, much like its successor, in favour of a single time for the entire subcontinent, exactly 5 ½ hours ahead of Greenwich Mean Time (GMT). Indian Standard Time has thus remained in practice in nearly unmodified form for more than a century since it was instituted by the British in July 1905.

For most of the period of British rule, colonial scientists and administrators would vainly attempt to, in the words of Government, "invite the public to extend the uniformity" of standard time, and first be confronted with mass non-compliance and non-adoption of the new clock times, and later with active defiance in the form of new standard times emerging as a direct protest against colonial state power and scientific bureaucracy. The prolonged nature of this controversy tells much about the changing nature of colonial power in the late nineteenth century, from the first attempts at instituting Railway Time in the 1870s, and Indian Mean Time in the 1880s, up to the notification of Indian Standard Time in the 1900s, and the hardening of different official and local times until the Independence and Partition of India and Pakistan in the 1940s.

The Partition of British India in 1947 reversed the grosser features of a single time zone across two hours of longitudinal distance – splitting the Muslim-majority eastern and western wings of British India into a separate state which proclaimed a new Pakistan Standard Time 5 hours ahead of GMT in 1955. When Bangladesh separated from East Pakistan in 1971 after a war between India and Pakistan, the new state proclaimed a Bangladesh Standard Time 6 hours ahead of GMT, signifying a half hour difference from both India and Pakistan. The intimate connection between clock time and state power is dramatised by the efforts of newly independent states to introduce new regimes of standardisation and measurement. The burden of these postcolonial regimes is to uproot and reorient actual ways of reckoning and keeping

time, and earlier state precedents and practices, in line with the new standards – in postcolonial India and Pakistan, the new national standard times, as well as the metric system introduced after independence, took decades to be widely adopted. In colonial India, local opposition to clock time did not merely wither away, and earlier time practices maintained a social life of their own, growing into a platform for mobilisation against the colonial state.

The widespread defiance of the standardisation of time in colonial India is a peculiar fact of colonial history – from the 1870s and 1880s when the British first introduced standard time up to the 1940s and 1950s when India won its Independence. Unlike the United States and Russia, which adopted multiple time zones across their territories, India was given by its foreign rulers a single time zone, more on the model of a small country like Britain, rather than a vast realm like the United States or Russia. The territorial extent of British India in the nineteenth century encompasses today's India, Pakistan and Bangladesh, a longitudinal distance of more than two hours, and physical extent of 2000 kilometres between the eastern and western frontiers of British India.

In early 2008, a private think-tank in New Delhi, published a widely-discussed study on the effect of Indian Standard Time (IST) on national energy consumption. Concluding that India's present single time zone of GMT+5.30 resulted in lost time in getting to work in the morning and wasted more energy in the evenings before going

to bed, particularly in eastern India, it proposed the shifting of Indian Standard Time half an hour ahead, to GMT+6.00. This half hour advance in the clocks would compensate for the difference of more than an hour in actual sunrise and sunset in the east and west of the country which resulted from observing IST.

The scientists calculated a savings of more than 16% in electricity in the evenings by advancing time half an hour, so people would sleep and rise earlier, and consume less power at times of peak load demand. Versions of this proposal to make adjustments to IST had been debated in and out of Government in New Delhi since the late eighties, many of them which questioned the very basis of a single time zone in a country which spanned a whole continent from east to west. These included instituting Daylight Savings Time of half to a full hour in eastern India for some part of the year, or creating two permanently separate time zones for eastern and western India, so that the solar differences were more faithfully reflected in the time on the clocks.

All of these proposals had been rejected because of the confusion and dangers they would pose, given the long-established precedent of Indian Standard Time. While imposing a north-south division of time might confuse villages through whose lands this invisible zonal boundary might pass, multiple times in different parts of the country also increased the risk of railway accidents. Some in Government also feared that a new east-west division created by two time zones in the country would increase “fissiparious tendencies”. While the threat to national unity by separating

time was somewhat exaggerated, the hoped-for gains in energy conservation by adjusting clock time were very real.

Proponents of adjusting the time hoped to reap rewards for the nation by increasing the productivity of labour by getting people to work earlier, providing more daylight hours would reduce crime by getting more people home before dark. Adjusting clock time could even boost athletic competitiveness, particularly in eastern India. One bureaucrat appointed to the committee to review Indian Standard Time observed that the north and west of the country were ahead in sports since children in the east did not get enough time to practise, since "evenings are early and day-starts are late because the hour on the clock wakes them, not sunrise". This renewed debate on clock time, widely reported and discussed in the Indian media, was perhaps unaware of its historical origins, and debates which took place almost exactly a century earlier.

Observatory Time

Until the mid-nineteenth century in most parts of the world, the start and finish of the day was regulated as much by sunrise and sunset as by mechanical clockwork. In the late eighteenth and early nineteenth centuries, authorities in London, Paris, Vienna and Berlin began instituting changes in the management of public clocks by installing master clocks which would transmit a single time to slave clocks throughout the city, synchronising their time signals through pneumatic pressure

tubes and electricity. Along with the institution of master clocks networks in the cities, authorities sought the aid of astronomical observatories in supplying the public clocks with the true solar time. By turning over time to their astronomers, they were "empowering a scientific discipline to determine their time".

As Michael Sauter has written of the related professions of star gazing and time keeping in early modern Berlin, "with astronomy and the government in league, both the public's approach to time and the tools for cultivating it" were subsequently transformed as astronomers and observatories became dispensers of the true time for industrialising cities throughout the nineteenth century world.

Modern clock time and practices of time-keeping are located at the confluence of the key technologies of the age of steam – the railways and the telegraph. The technological conditions of possibility for the standardisation of clock time are satisfied by three interlocking socio-technical practices:

1. precise astronomical observation of sunrise and sunset in relation to the earth's rotation and curvature,
2. electrical transmission by telegraph networks across vast territories,
3. the parallel expansion of the railway networks in these territories, radiating out from the industrial cities.

Conventional accounts of the growth of time discipline and dissemination of clock time usually begin with the telegraph line, railway whistle and factory siren. While

we will examine the role of the telegraphs and railways in transmitting clock time in sections below, the precise determination of solar time were only of many specialised scientific tasks which could only be performed by the observatory. Through the observation of lunar and planetary orbits and fixed stars, astronomers could determine the precise geographic location of a place, aiding geographers and surveyors in mapping, as well as navigators and civic authorities in providing the true time. The determination of terrestrial longitude is, for astronomy, conceptually equivalent to the marking of the true time. The translation of these abstract observations into concrete facts was the crucial function of the colonial observatory in India, one which transferred the authority of science into the technology of state power, and aided the expansion of the English East India Company in its territorial conquest of India in the mid-nineteenth century.

For a century until 1857, when the Crown superseded the East India Company under direct rule from Britain, the Company's merchants and traders organised themselves into "factories" or trading centres whose "presidents" grew into governors as the Company evolved into a territorial power in the nineteenth century. Colonial power radiated out from the Company's original base in Calcutta – the seat of the supreme Government of India – and the "presidency towns" on the south-eastern coast at Madras and on the western coast at Bombay. By the mid-nineteenth century, of these three great cities of the Indian Empire, Bombay on the west coast, and Madras and

Calcutta on the east coast, each maintained a separate local time based on its sunrise and sunset.

The Government Observatory in the southern city of Madras, on the east coast of India with the Bay of Bengal, was established in 1789, its construction directed by the astronomer John Goldingham, who was then appointed as its first official astronomer by the East India Company in 1800. It was Goldingham who first approximately determined the longitude, or difference in time, between Greenwich and Madras, as 80° 18' 30" degrees, or 5 hours 21 minutes and 9.4 seconds, and created what subsequently became known as "Madras Time". These were based on his observations of eclipses between Jupiter's satellites conducted between 1787 and 1815, and were adjusted based on additional observations from 1817 to 1826. Crucially, Madras being the only astronomical observatory in colonial India equipped for such observations, Madras Time became the benchmark against which local times in other parts of colonial India were determined.

Goldingham's successor as Government Astronomer at the observatory, T.G. Taylor, between 1831 and 1844 arrived at a smaller value of 5 hours 20 minutes and 57.2 seconds, based on a different and more reliable method of lunar observation. Taylor's results were used in the Nautical Almanacs, and for the precise determination of Madras Time, between 1835 and 1882.

The longitudinal value for Madras finally adopted by the Nautical Almanac at the time of was based on these values, combined with values of distances between Suez,

Aden, Bombay and Madras obtained by telegraph by the Trigonometrical Survey and the 1874 Transit of Venus Expedition in India led by Italian astronomer Pietro Tacchini. By 1882, Pogson observed that "should a final trial by means of direct signals between the Greenwich and Madras Transit Clocks ever be accomplished, verification rather than correction will probably be all that can be expected from the undertaking". By virtue of its observatory providing the most exact measurements of longitudinal value and global time difference, Madras Time became the most accurate and the measure of all others in India, notably for the two other presidency towns and colonial port cities, Calcutta and Bombay.

The Colaba Observatory was established on the southernmost island of the city of Bombay in 1826 by the East India Company for astronomical observations and time-keeping for the commercial interests and military forces stationed in Bombay Harbour. Unlike its larger and older sister institution in Madras, in its early years the Colaba Observatory was devoted to more "practical applications" such as reporting the weather for navigation, examining and comparing clocks, rating chronometers, measuring magnetic forces to assist surveying, and determining the position of the sun and therefore the local time in Bombay.

Regular observation and publication of "Bombay Magnetic and Meteorological Observations" were compiled and published from 1846 onwards. Over the next thirty years, new techniques and equipment were actively sought and developed, including spectroscopic observation of the sun, automated techniques of geomagnetic

photography, meteorological and seismological measurement, through the work of British astronomers and (later) physicists working with Indian assistants and in active correspondence with observatories, societies of astronomers, meteorologists, and individual scientists from across the British Empire, Europe, and North America – the observatory's annual report from 1883 contains an impressive list of corresponding institutions and individuals[29].

Time by Telegraph

> The political unity of India [...] was the first condition of its regeneration. That unity, imposed by the British sword, will now be strengthened and perpetuated by the electric telegraph. [...] Steam has brought India into regular and rapid communication with Europe, has connected its chief ports with those of the whole south-eastern ocean, and has re-vindicated it from the isolated position which was the prime law of its stagnation. The day is not far distant when, *by a combination of railways and steam vessels, the distance between England and India, measured by time, will be shortened to eight days*, and when that once fabulous country will thus be actually annexed to the Western world".[30]
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> Karl Marx, 1853

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2 9 MSA General Department vol.107 / 1883, "Report on the Conditions and Proceedings of the Government Observatory, Colaba for the year which ended with the 30th June 1883", pp.35-42

3 0 Karl Marx, "The Future Results of British Rule in India" in the New York Daily Tribune, 8 August 1853, reprinted in Eugene Kamenka, The Portable Karl Marx, New York: Viking Penguin, 1983, pp.337-341 (emphases added)

While astronomers had consolidated their hold over the supply of accurate time in the eighteenth and early nineteenth centuries to navigation, shipping and civic interests, and pre-industrial merchant and urban communities regulated their days and hours by the observation of clocks and sundials, the standardisation of modern clock time would have been impossible without that key communication technology of the Victorian era, the telegraph. Electric transmission of time signals by telegraph, and the rapid spread of these signals up and down the newly constructed railway networks, established the conditions for standardising time across places and territories which had previously observed local solar times.

The telegraph was a key element of Victorian techno-scientific culture, a key site for the exploring the workings of electricity and physics, besides serving an organising metaphor for Victorian society. Akin to a central nervous system, the telegraph demonstrated the possibilities of an effective and flexible instrument for policing the social body as a tool of discipline and surveillance, much as it regulated the movements of railways by instantly transmitting information throughout a complex system through the power of electricity.

The telegraph as "electrical panopticon" demonstrated its usefulness to its Victorian proponents in conveying information across time and space during the Chartist uprisings in Britain in 1848 and during the Indian Mutiny in 1857, when it was employed in military and police efforts to suppress widespread popular revolts against state power, both within Britain and against British rule in India. By enabling

the centre to gather intelligence about insurrectionary activities at its peripheries, "authority could maintain its mastery by manipulating time to outmanoeuvre the machinations of the deviant or subversive"[31].

In this cultural context, where command of the the new technology of communication proved decisive in controlling the population, and its romance in print and literature promised a new mode of human and machine intelligence, a plan was advanced in 1849 by the Astronomer Royal, George Biddell Airy, to connect the sidereal clock at Royal Observatory at Greenwich to the expanding railway networks through electric telegraph to disseminate accurate time-signals. Airy's proposal to the proprietors of the South Eastern Railway Company, which operated a line near Greenwich, was summarised by Charles V. Walker, superintendent of telegraphs for the company, as threefold:

1. To transmit Greenwich time and corrected time to and from the clock at the New Houses of Parliament and the Royal Exchange;
2. To transmit Greenwich time throughout the kingdom by various lines of electric telegraph;
3. To compare the transit of stars at Greenwich with the same at Paris.[32]

While the last goal of the project was purely scientific – the comparison of astronomical observations between observatories would make possible the more

3 1 Deep Kanta Lahiri-Choudhury, *Telegraphic Imperialism. Crisis and Panic in the Indian Empire, C.1830-1920*, Palgrave MacMillan Transnational History (Basingstoke: Palgrave Macmillan, 2010).

3 2 Reference?

precise determination of longitude – the first two were political and commercial, establishing the accuracy and universality of Greenwich time throughout the United Kingdom. By 1852, the Greenwich time signal was being distributed from the Royal Observatory to the South Eastern Railway terminus at London Bridge along its Lewisham line. A few years later the operation of the cross-Channel link to the Paris Observatory was established, enabling relays of time signals with the continent.

Airy's innovation in harnessing the telegraph and railway networks to the distribution of celestial time signals permanently transformed the machinery of keeping and transmitting time, and the new technology of transmission of observatory time signals through telegraphs became the site of new alliance between astronomers, state administrators, and the managers of railway and telegraph companies in the nineteenth century.

In the early nineteenth century, GMT was becoming established throughout the world as a convenient means of referring to time independent of location, though it was only legally adopted as the local mean time across Great Britain in 1847 by the Railway Clearing House.

Colonial railway construction was coeval with the speculative boom and railway mania which peaked in England from the 1830s to 1850s, with the first suggestions to build railways in India being aired as early 1832 in Madras, the development of railways in India had been debated amongst colonial engineers and native merchants since 1840. In 1844, Robert MacDonald Stephenson – the son of the the celebrated

designer of the first working steam locomotive, mechanical engineer George Stephenson – published his "Report upon the Practicability and Advantages of the Introduction of Railways into British India", which excited investors and speculators in Great Britain. In 1845, the GIP had been set-up as a company, and in 1849 it was incorporated by an Act of Parliament. to the East India Company by George Clark and Henry Conybeare, engineers to the Bombay Government, in 1843-4.

In 1853, when three locomotives and 14 carriages with 400 guests was flagged off with a twenty one gun salute from Bori Bunder Station in Bombay to the town of Thana, 21 kilometres to the north. Thus was inaugurated the first commercial passenger service, the Great Indian Peninsular Railway (GIPR). The first railway passenger service in England had been introduced only 23 years earlier, the Liverpool-Manchester Railway having opened in 1830 and the Stockton Darlington Railway, designed George Stephenson, in 1825. Like the Liverpool-Manchester and Stockton-Darlington Railways, which were financed and constructed through the initiatives of groups of financiers and industrialists connected with the cotton and textile industry and coal and iron mining, respectively, the development of the GIPR in the mid to late nineteenth century closely followed commercial interests. From 32 kilometres of track in 1853, by 1893 (see Plate 1) the subcontinental railway network had grown to over 33,000 kilometres linking inland and upcountry cities, towns, and entrepôts with the major port cities of the Presidencies, Bombay, Calcutta and Madras.

Madras Time, 1870-1883

The introduction of mass railway travel and telegraphic communication made public time-keeping an intense concern and anxiety of the administrators of British India. By the late 1860s, the Telegraphs began observing uniform time in their despatches, using the local time of Madras as a common standard, as it was this time which was communicated on their lines (see on telegraphs and observatories above). The connecting up of the great subcontinental railways, with their separately maintained times and schedules, made necessary the introduction of a standard railway time. On 5 April 1870[33], the Public Works Department of the Government of India telegrammed a resolution on that "a junction having been effected of the two trunk Railways between Bombay and Calcutta, the Bombay Government have proposed that, as Madras is the only Government Observatory in India, its times shall be adopted on these lines" and "its adoption would have the advantage of being fairly convenient to Calcutta, Bombay and Lahore, and therefore to the included area, whilst to Madras itself as one of the great cities of India, it would necessarily be acceptable. It would further be convenient when through Railway communication is

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3 3 Jim Masselos, "Bombay Time" in Meera Kosambi, ed. *Intersections: Socio-Cultural Trends in Maharashtra*, Hyderabad: Orient Longman, 2000, pp.161-183.

established between Madras and Bombay, which may be looked for in the course of a few months"[34].

These changes were effected by the railway companies in standardising their schedules, which had earlier been based on time kept at their main hub or terminus in one of the presidency towns. While the standardisation of railway time across the subcontinent was instituted in 1870, efforts to render railway time as a common mean time for the entire subcontinent – what became known as Indian Mean Time (IMT) – proved less amenable to administrative fiat. Less than a month after the resolution on standard railway time, F.C. Hope, the Collector and Magistrate of Surat, a major trading port and manufacturing centre north of Bombay City, "received representations from various quarters regarding the extreme inconvenience to the people caused by the adoption of Madras Time on the Bombay Baroda and Central India Railway (BBCI)".

The BBCI was, like the GIPR, head-quartered in Bombay City, from where it took its time and on which its time-tables were based. Unlike the GIPR, whose lines stretched

3 4 MSA PWD (Railways) vol.44 / 1870, Compilation no.53, 5 April 1870. This compilation contains the resolution and order to the Consulting Engineer for Railways and the agent of the GIPR to prepare all future time-tables according to Madras Time, as well as copies of the new railway time-tables for 1870. However, the Government of India communicated to the Quarter Master General of the Army on 14 June 1870 that local time be maintained for all military stations under his command, as the adoption of Madras Time "can only affect the troops of the different garrisons when they are ordered to move by rail" and that at these times, the officers should "make due allowance for the difference between local and railway time".

east from Bombay City into the cotton-growing hinterlands of Central India to connect with feeder lines from the east and south, Hope complained that the BBCI "has no connection" with the east-west routes of GIP and East Indian Railways where "the necessity of Madras Time is... obvious", since it "runs almost north and south". Hope warned that "if the public clocks in large cities such as Surat are to be altered to Madras Time then they will be at variance with all hours for office, meals, rising and going to bed, and ceremonies and if they are not altered, then travellers will be misled"[35].

These fulminations against the shifting of the clocks were a foreshadowing of more serious confusions and uncertainties to come. However, perhaps anxious to avoid problems of coordination of vital commercial and military networks hardly a decade after the 1857 Rebellion, in 1870 the Government refrained from more radical measures to institute Madras Time as standard clock time throughout India.

Differences between new *railway time* as determined by observatories, telegraphs and railways, and traditional *local time* observed by sunrise and sunset, were maintained, and two concurrent times were observed by the general public. Whereas railway time was standardised across India by 1870, each locality and region continued to observe its own local time according to the measurement of the mid-day by high noon in each particular place across the subcontinent. So whereas Calcutta in the east was 32

3 5 MSA Public Works Department (Railways) vol.23 /1870 / Compilation no.213 "Madras Time, adoption of by the B.B. & C.I. Railway, Representation from the Collector of Surat regarding the extreme inconvenience caused to the people by the...", pp.1-2

minutes and 49 seconds behind the time at the Madras Observatory, Bombay in the west was 38 minutes and 50 ahead of this new standard time, now observed by the railways, posts and telegraphs. The old local times continued to be observed by shops and establishments, government offices and the public, and a system of two concurrent times prevailed until the turn of the century.

Railway Time, 1883-1884

Ten years later the situation had changed. In 1881, the colonial Governor of Bombay, James Fergusson, attempted to intervene more directly in the matter of time-keeping by directing that Madras Time should be observed in all government offices "and shall be held to be the official time for all purposes" from and after 1 December 1881. The order invited "the public to extend the uniformity which this order is designed to secure in public offices by adopting Madras time for general use".[36] This, in effect, entailed bringing time forward by around half an hour in western India and Bombay, obliging government employees to report earlier to work in the morning, and seeking to compel the public to follow these changes in their own daily routines and time-keeping. This prompted an outcry by the native and European press against the already unpopular Governor (whom it was alleged had instituted the new standard

3 6 MSA Public Works Department (Railways), vol.23 / 1881 / Compilation no.322, "Madras Time, adoption of, in all offices"

time as he had himself missed two trains as he had been confused between Railway and Bombay Time).

The Governor had been encouraged to adopt this measure after consultation with the merchants and businessmen in the Bombay Chamber of Commerce, who had initially welcomed the new standard time for common use in both official and everyday life. However, "after fully a year's trial" the Chamber complained to the Governor that "the keeping of Madras time in the City of Bombay is not acceptable to the community, and that the different times which are now kept give rise to much irritating inconvenience". In 1883, the Chamber suggested to the Governor reverting to what was now known as "Bombay Time", the local mean time used in the city.[37] The letters from the Bombay Chamber indicated much resistance by the mercantile community to standard time.

Even within official institutions, the adoption of the new standard time posed problems, as the Governor's invitation to "extend uniformity" was resisted by mercantile and shipping interests, dominated by native business communities. In December 1881, shortly after the announced changes, reports appeared in the press that the Government Post Office had not moved to Madras Time, and the Postmaster General, A.N. Fanshawe was directed to respond as to his reasons for not instituting changes in postal timings. He responded that while all other post offices in the

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3 7 MSA Public Works Department (Railways), vol.8 / 1883 / Compilation no.177, "Bombay Time, keeping of local time in all Government offices in Bombay and at Aden",

Bombay Presidency had been on Madras Time since 1878, in Bombay City local mean time had been maintained in the "interests of the whole Bombay public and especially of the mercantile classes" who stood to lose half an hour of "at a time of the day when experiences shows that it is most valuable to them". "The present hours of money order business... are from noon till 4 o'clock P.M., as laid down generally for the whole of India, and in Bombay the chief part of the day's transactions take place between 3 and 4 o'clock P.M." Not just merchants remitting funds, but "the public generally would lose an important half hour of the time allowed for posting Overland Correspondence on the day on which the Mail Steamer leaves Bombay. The departure of the Mail Steamer will still take place at the same time of the day by the sun as hitherto."

Since the merchant community and steamer services continued to operate on local time in Bombay, Fanshawe held up a change in business hours at the GPO. A secretary of the Government of India commented on his letter that "it would appear that he intends to judge for himself of the expediency of a step taken by this Government after mature consideration, instead of endeavouring to cooperate with them" in "securing uniformity". Fanshawe promptly replied in January 1882 that he had consulted with the Peninsular & Oriental Shipping about adopting and advertising the new times for the mail steamers, promised that the changes would be

instituted by February 1882, and apologised for giving "the impression that there was any want of loyalty on my part" towards supreme Government.[38]

In Karachi, the port city west of Bombay on the Arabian Sea (now in Pakistan), also part of the Bombay Presidency in which Fergusson's order was applicable, civic elites in the Sindh Sabha and the Chamber of Commerce memorialised the Governor to relax his earlier decision in the city of Karachi, such as he had already done in Bombay City. It should be noted that Karachi was about 53 minutes behind Madras Time. This almost hour-long difference dramatised the dualism of local and official times, and the Sind Sabha memorialists complained that "practical inconvenience arising from dual chronology [sic] is neither light nor insignificant".

As in Bombay, the memorialists noted that while government offices, telegraphs and railways observed Madras Time, both European and Indian merchants and harbour shipping concerns kept local time. The order to extend temporal uniformity "by enforcing the observance of Madras Time by all Government servants, who are every where a large and influential class, has had indirectly the effect of extending the scope and area of its operation and compelling its recognition though not its acceptance in ordinary parlance and business". The Karachi elites warned, perhaps far-fetchedly, that the uncertainty arising from this partial adoption of standard time had serious consequences for colonial law and order. "In judicial inquiries and trials,

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3 8 MSA General Department, vol.93 /1882 / no.125, "Official Time, Madras Time to be kept as –, in all Government Offices", pp.433-461

mendacious witnesses have often been noticed explaining fatal discrepancies by falling back upon the distinction between Madras and Local Time. This distinction therefore in some measure lays a premium on perjury and your memorialists feel confident that this in itself is a weighty reason for doing away with the anomaly".[39]

Responding to these representations by native civil society as well as its own officialdom, the Government withdrew its order on official time, by restoring the local mean times in Bombay City and Island in May 1883[40], and in Karachi in August 1884[41]. While we have no evidence of perjury in colonial courts based on the difference between standard and local time as warned by the Karachi memorialists, their petition to Government indicated the new reach of the technology of clock-time. Indeed the colonial state had hitherto never attempted to intrude so directly into the work rhythms and everyday life of native inhabitants.

Fergusson's order on the adoption of standard time authorised a re-ordering of commercial and social life by technical fiat, an attempt that was successfully resisted by urban elites in Bombay and Karachi in the 1880s, forcing the colonial state to withdraw official time and resume local time. Crucially, the order remained in effect for the entire Bombay Presidency, with only the cities of Karachi and Bombay

3 9 MSA General Department, vol. 120 / 1884 / Compilation no.338, "Official Time, keeping of local time in Government offices", pp.41-44. In the original record, an official expressed his opinion on the legal consequences of the time difference in a single word – "rubbish".

4 0 MSA Public Works Department (Railways), vol.8 / 1883 / no.177, pp.1-4

4 1 MSA General Department, vol. 120 / 1884 / Compilation no.338, "Official Time, keeping of local time in Government offices", p.69.

reverting to their local mean times, while their vast hinterlands were officially under the new standard of "Indian Mean Time". We have no records of resistance to these changes from the countryside. While the official archive contains polite memorials and requests for redress by elite native representatives, as well as official correspondence on the problems of operationalising the new common time, all these reports indicate a widespread non-compliance with (or simple ignorance of) the new regulation on standard time.

The archival records manifest a dramatic divide in Victorian India between colonial elites and native society, and the withdrawal of the order, and acquiescence in local time-keeping practices by the colonial state, is proof of its limited power to intervene in the lives of its subjects. Historian Jim Masselos, in his essay on the controversy over time-keeping in colonial Bombay, describes Fergusson's 1881 order as a critical moment when radically different concepts and practices of time keeping and time consciousness were juxtaposed across the colonial divide between foreign rulers and their subjects. This essentially hinged on the relationship between the work rhythms and lifeworlds of a native population whose routines were not governed by the use of either personal timepieces or public clocks, and the colonial sphere of rational and mechanically determined clock time.

> The nature of the morning routine, from rising through washing and on to eating a major meal of the day before the commencement of work – all of these were affected by the change in time, since it reduced the space between sunrise and work. Despite clocks and urban patterns of movement

> and work timetables, what became clear from the debate on Madras Time was that much of the city still regulated its activities on the basis of the movements of the sun, of its rise and setting. In this aspect city inhabitants still followed much the same rhythm of work routine as their rural counterparts – urbanisation had not changed the underlying structural relationship to sunrise and sunset nor had office work, nor mill labour, nor that of retail, banking or commercial activity or any of those other occupations that constituted the other parts of the city's economic structure.[42]

Over the next twenty years, the keeping of local solar time alongside official railway time became a habit of city dwellers in Bombay, and what came to be known as "Bombay Time" became a signifier of local difference of thirty minutes behind official railway time, which in the rest of the country officially became known as "Indian Mean Time" but retained its local taint in colloquial usage, which still referred to the standard as "Madras Time". Between the first introduction of railway time in 1870 and the attempt at standard Indian Mean Time in 1881, there was concurrent recognition of local mean times as well as standard railway time.

While between 1881-1884, during the controversy over Fergusson's order, resistance to the standardisation of clock time did not take the form of active protest, the issue would remain vexed for the public of Bombay City, which now observed local Bombay Time in the city and Indian Mean Time in their transactions with the rest of the Presidency and the rest of India. This time difference signalled a 39 minute difference between local, city institutions such as the municipality, university and

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4 2 Masselos, pp.167-8

high court, and post offices and all-India agencies such as the railways and telegraphs.

From 1883 onwards, all official establishments under the provincial Government of Bombay maintained a rough thirty minute difference from Madras Time, or Indian Mean Time, as it was renamed by officials, to remove the taint of its place of origin – of course in Bombay it remained known as Madras Time, as the very idea of a standard time for all India had been rejected by its public, and reluctantly accepted by the authorities in Bombay. But outside of the Island City and in the mofussil or rural areas of the Bombay Presidency, Indian Mean Time was officially adopted.

Global Standard Time

In the two decades that transpired between the first time debates in 1883-1884 and the renewed controversies in 1905-1906, the railways had plunged their tentacles deep into the hinterland regions and increasing numbers of peasants and workers entered the orbit of the technologies of colonial rule – the modern machineries of commodity production, wage labour, and clock time which developed in the cities, and extended deep into the hinterland to draw upon its supplies of land and labour. The development of railways in the late nineteenth century and extension of telegraph lines alongside in a dense web across the subcontinent, from the Presidency towns into their hinterlands agricultural regions, hilly tracts and across the great

coastal ranges of the western Malabar and eastern Coromandel coasts. The growing numbers of hands and bodies employed in the city's burgeoning textile mills, and their seasonal migration to their villages, established new circuits of migration and circulation between the city and its dependent along the major trunk lines of the railways in the coastal agricultural and inland cotton belts.

In 1883, shortly after the introduction of Madras Time as standard railway time throughout the subcontinent, Lord Marquis, Governor General of India, requested comments from the India Office in London the question of the maintenance of the Madras and Bombay (Colaba) Observatories. The request was forwarded to Airy's close deputy and successor as Astronomer Royal and director of the Greenwich observatory. William H.M. Christie was one of the emerging generation of Victorian scientists for whom the pursuit of their discipline merged seamlessly into the practice of empire, and in his report to Lord Marquis we can see him actively constructing the social dimension of his science, linking the pursuit of knowledge to the advance of imperial interests. Christie argued both for the scientific value of the colonial observatories to the progress of astronomy, through the charting of the northern and southern hemispheric star systems, and such new fields as solar physics.

However, Christie's burden was to explain their "direct practical benefit" to Government beyond determining the sunrise and sunset and providing the precise local time. Christie suggested affiliating the Indian observatories to the Great

Trigonometrical Survey, and the wisdom of maintaining two observatories "on opposite sides of the Indian peninsula". "The requirements of a port like Madras seem to make it necessary that similar observations should continue to be made there, more especially as Madras Time has now been adopted throughout India. Though observations of local time in themselves do not involve the maintenance of an Astronomical Observatory properly so called[,] they furnish a very strong reason for maintaining one already in existence, as the instruments which have been provided for scientific work are equally available for practical applications".

While an expanding range of astronomical charting and recording of geomagnetic, solar and seismic phenomena, astronomers viewed magnetic and meteorological observations as as "strictly subordinate" to proper scientific work whose practical applications were questionable. Moreover, the pursuit of science in a colonial context was limited by the utilitarian basis and alien nature of colonial rule. Christie, remarked "there is no scientific public in India which could bring pressure to bear on the conduct of an observatory", and therefore recommended a system of control and inspection of observatories to ensure the continued publication of recordings and observations "on which the value of an observatory almost entirely depends".[43]

Indeed, the absence of a public which could represent its own interests in the progress of modern science was the special burden of enlightened British scientists

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4 3 MSA General Department vol.107 / 1883, Compilation no.561, "On the System of Control of the Madras and Bombay Observatories", pp.3-15

and administrators in colonial India, lately facing a stubborn resistance to technological change. Only months after the first standard time proposals had been withdrawn by Governor Fergusson in Bombay and Karachi – and with a similar restoration in the capital city of British India, Calcutta, to its own local mean time – scientists, statesmen, and engineers representing twenty five countries and their colonial dependencies gathered at the historic International Prime Meridian Conference held in Washington DC in 1884 at the invitation of President Chester Arthur.

British India's representative at the conference was Lieutenant General Sir Richard Strachey. An retired officer in the Indian Army who had served the Company before the 1857 Mutiny, Strachey was an enthusiastic amateur botanist, naturalist and astronomer who remained connected with Indian affairs after returning to Britain in the 1870s, and was a member of the Royal Society. In his early days as an officer of the Bengal Engineers, he had carried out expeditions in the Himalayas and Tibet, from where he maintained a correspondence with Charles Darwin[44]. In 1869, during one of the longest and most dramatic solar eclipses of the nineteenth century, Strachey had organised an eclipse expedition through southern India which was attended by observatory directors, spectroscopists and astronomers from all over Europe and America. He assisted in the establishment of the Indian Meteorological Department in 1875, in response to a cyclone which hit Calcutta in 1864 and the

4 4 Charles Darwin Correspondence Project
http://www.darwinproject.ac.uk/darwinletters/namedefs/namedef-4584.html

failure of the monsoons which caused famines in Bengal in 1866 and 1871[45]. In 1884, while attending the Washington conference as India's representative, Strachey was a member of Council of India and chairman of the Meteorological Council of the Royal Society.

By the 1880s and 1890s, following standardisation of operating times for railway transport, telegraph communication, and steam navigation across most parts of the world, scientists and administrators of global European empires established the system of national time zones based the Prime Meridian of Greenwich, into which the entire world's territories would, it was hoped, eventually fall in line through the adoption of national time zones. British India, and other continental empires of Russia, Ottoman Turkey and North America, presented the major test cases for these new forms of state control of vast frontier territories and continental empires by European colonisers. Recent scholarship has drawn our attention to the connections between modern science, global imperialism, and the history of technology, and the work of anthropologists and historians of colonialism such as Bernard Cohn and Arjun Appadurai have thrown light on how modern technologies of measurement, surveillance, and classification were key to the formation of state power in the

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4 5 http://en.wikipedia.org/wiki/Indian_Meteorological_Department and http://www.imd.ernet.in/doc/history/eastablishment-of-imd.htm The Department was later subsumed under the Department of Agriculture and Revenue and is today under the postcolonial Ministry of Science and Technology.

colonial context[46]. Peter Galison has also chronicled the competing British and French attempts to standardise clock time across the world under the sway of European empire, in successive phases from the mid-nineteenth to earlier twentieth centuries[47].

Global standard time, dividing the globe into a worldwide scale of zones of minutes and degrees into which all of the world's territories were embraced and could refer is one of the most lasting imprint of the early industrial age of railways, steam and telegraph networks on our contemporary present. The conditions of possibility for standardising time across the world were satisfied by the forces of modern science, state power, and imperialism. These conditions, while necessary to instituting the new global regime of standardised clocks, time zones, and territorial control, were not sufficient to guarantee the unification of global time and space through imperialism. However, from the perspective of colonial Bombay, the history of clock time looks less like the smooth unfolding of a single standard across the space and time of the subcontinent, than a protracted war of position fought out across the nineteenth and twentieth century by scientists, administrators, politicians and their mass followers. At stake in this protracted battle was more than the just the time on the clocks – the telling of time in colonial India became a sign and index of the relation between scientists and politicians, city and hinterland, and state and society.

4 6 Bernard Cohn, *Colonialism and Its Forms of Knowledge: the British in India* (Princeton N.J.: Princeton University Press, 1996); Arjun Appadurai, *Modernity at Large: Cultural Dimensions of Globalization* (Minneapolis: University of Minnesota Press, 1996).

4 7 Peter Galison, *Einstein's Clocks and Poincare's Maps: Empires of Time*, 1st ed. (New York: W.W. Norton, 2003).

What became known, at the turn of the century, as "Bombay Time" presents a counter-narrative to the irresistible and revolutionary logic of industrial capital offered by the conventional histories and geographies of technology transfer. Clocks and other time-keeping devices could in fact be synchronised by railway time, local solar time, or any number of competing standards – of Greenwich, Madras or Bombay. In the colonial urban context, time was a function of coordination and control, as new technologies such as railways and telegraphs articulated their own hierarchies of functions based on their locations as nodes of transport and communication. The patchwork of arrangements for keeping time in colonial India suggests that standards are neither adopted simply through rational efficiency – as economic or geographic analysis might have it – nor simply through power – as dependency and postcolonial theories often imply. Both rulers and ruled were both subject to the domination of clock time, and its introduction and standardisation were subject to complex political negotiations.

The history of clock time in colonial India and the subcontinent presents a picture greatly at odds with the determinist narrative of technological transfer, homogeneous standardisation, and uninterrupted diffusion. The history of attempts to institute mean and standard times between 1870 and 1905, annexing India into the orbit of colonial capital, resource extraction, and industrial space appears less as a smooth transition to a singular regime of time and space, than a patchwork of competing scientific claims to longitudinal determination, failed state attempts to standardise

public time and the work rhythms of urban society, and elite manoeuvres to recruit a subject population in opposition to the colonial state.

3. Clocks

Indian Standard Time

The vice-royalty of George Nathaniel (Lord) Curzon at the turn of the century is considered the peak of British colonial power in India. It was only fitting that the high-noon of Empire, on which the sun proverbially never set, should witness the final attempt by the British to fit India more tightly into the global system of meridian-based hourly time zones, which had been agreed upon in the Washington conference in 1884 and introduced through much of Europe, the United States, and colonial Africa and America in the following twenty years.

Indian Mean Time, the standard which had been adopted twenty years earlier by the railways and officialdom, was based on the position of the sun at Madras, which by virtue of its relatively central location and its observatory's ability to telegraph the true time to the railways, served as a convenient, if inaccurate, point from which to transmit time to the rest of the country. In fact, Madras was 5 hours 21 minutes ahead of Greenwich, not the 5 hours 30 minutes more convenient for calculating the time of day (the actual difference was of 8 minutes 49 seconds). The proposal for an Indian Standard Time would fix this intolerable lag of almost nine minutes, and in 1905 Madras would be displaced in favour of the northern Indian city of Allahabad as the exact longitudinal centre of the subcontinent from which its time would be told across its continental length and breadth. Or at least that was the proposal.

The "note on a proposal for an Indian Standard Time"[48] was originally written by Meteorological Reporter to the supreme Government of India in Calcutta in July 1904, and was circulated for comments to provincial governments in India in the following year. The proposal began by noting the crucial hiatus between the *scientific ideal* of global standard time based on the world-wide system of meridians and longitudes with hourly differences centered on Greenwich, and the *actual fact* of time zones which were based on countries with their own clock times across their widely varying territorial extents, "the same time being kept throughout each country or state, and the change of an hour being made, not when the meridian, but when the frontier is crossed".

It noted that the system of hourly zones which followed from the Washington Conference in 1884 "is possible because the countries, colonies and states which have so far adopted the system never extend far beyond the limits of a single-hour zone" (the United States and Russia were notable exceptions to this rule, large continental states with multiple time zones which were not mentioned in the proposal). Attaching a long list of countries which had already adopted national standard times, the proposal stated the importance and utility of national time zones, and that the simple hourly relation to Greenwich time "the standard of reference" of the "civilised world" was now obvious. The meteorologist cited the difficulties of tabulating data on cyclones, storms, and earthquakes from different locations, and the tracking

[48] MSA General Department Abstracts of Proceedings, 1905, Serial no. A-33, "Propsal for the adoption of a Standard Time for general purposes all over India", pp.99-107.

movement of the monsoons – crucial to agriculture, the basis of colonial state revenue – due to the "doubt which attends all statements of time". Scientists "were utterly frustrated by the unreliability and inaccuracy of the time given by observers in the smaller towns and villages over which the storms passed".

This was the scientific case for Indian Standard Time, presented to the Governor General in Council, Lord Curzon, who in turn requested the opinions of the Bombay government and "leading commercial bodies and Port authorities in the Presidency" on the political feasibility of changing the clocks, and removing the anomaly of the earlier Bombay Time in use by officialdom as well as by the general public in the city since 1883. Hinting at the controversy twenty years earlier, Curzon considered adopting Indian Standard Time all over India as "exceedingly advisable" but stated that "the matter is clearly one that must be left to local communities to decide".

The substitution of the new Standard Time for the earlier Madras or Indian Mean Time for the railways and telegraphs was unobjectionable, as it involved a shift of less than nine minutes ahead by the railway companies, where the principle of standard operating time across India had been accepted thirty years earlier. The proposal noted that "wherever there is a railway station or a telegraph office, the correct standard time is, and will continue to be, periodically signalled direct from the Madras observatory, so that there never be any doubt as to accuracy". The uniformity and precision of these time signals was, however, not the real issue – it was the abominable multiplicity and uncertainty of clock time in the cities:

> The two great cities of Calcutta and Bombay, although the difference between standard and local time is in each case only about half an hour, still make use of the latter for general purposes; insomuch that at Bombay there are actually *three separate times* in use – railway time, local time and port-signal time [see below], while, local being behind railway time, forgetfulness of the fact means missing the train. The existence of observatories at both places enables local time to be ascertained with accuracy.
>
> But it is greatly to be desired that standard time should be adopted; and it is not impossible that the substitution of an *Indian* time, taken from an arbitrary meridian, for a *Madras* time, taken from a rival capital, may facilitate the change. It would involved putting all clocks back 24 minutes in Calcutta and forward 39 minutes in Bombay. If the clock-times of the daily routine were left unaltered, a man would get up, breakfast, and go to office 39 minutes earlier in Bombay and 24 minutes later in Calcutta than before; but, *per contra*, he would go to bed, dine, and leave office 39 minutes earlier or 24 minutes later to correspond. The whole day's routine would be bodily shifted about half an hour forwards or backwards, and in a few weeks the fact that there had been a change would be forgotten[49].

While underestimating the physical and political memories of the time controversies twenty years earlier, and the disruption of social time involved in the 39 minute difference, the Government nonetheless tread cautiously with regard to public opinion about introducing the new Indian Standard Time to Bombay City and Presidency. The supreme Government requested the opinion of Bombay provincial and city authorities, and the proposal was commented upon by various institutions, scientific, political and commercial. The railway authorities, commissioners and

[49] ibid., p.101 (*three separate times* my emphasis)

district collectors in charge of the rural administration, the Postmaster General and others supported the proposals. One noted the residue of the earlier controversies, when "the mercantile community was thrown into an attitude of opposition... which it seems to have been a point of honour with them since to maintain"[50]. Indeed it was the commercial and civic bodies in Bombay City which demurred – the Chamber of Commerce, Port Trust and Municipal Commissioner all noted that while the proposal had merits with regard bringing India into the global system of standard time zones emanating from the prime meridian at Greenwich, they were against its adoption in Bombay City, citing local opposition and inconvenience.

By far the longest and most detailed consideration and endorsement of the proposal for IST was offered by the Indian astronomer Nanabhoy Ardeshir Framji Moos, who had assumed the directorship of the Colaba Observatory in 1896 from his mentor Charles Chambers. N.A.F. Moos, a Parsi educated in Edinburgh, the first Indian to direct the Colaba Observatory in Bombay, was an enterprising astronomer and solar physicist, and made significant contributions to the emerging disciplines of geomagnetism and geodesy from his observatory at the southern tip of the Island City[51].

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50 ibid., p.107

51 http://iigs.iigm.res.in/history.htm . In 1906, due to vibrations and magnetic disturbances caused by the increasing density of electric tramway lines in Bombay City, he led the move to setup a new observatory on the mainland of India, across the Harbour in Alibaug

In 1896, the same year as Moos assumed his directorship, the Meteorological Department advised the creation of the post of Director of Time Communication to the Harbour. The post would be held by the observatory director, under the supervision of the Bombay Port Trust (BPT). Moos was remunerated at "Rs 150 per month for superintending the the working of the Time Ball arrangements" in Bombay Castle, and in the Victoria and Prince's Docks[52] owned by the Port Trust. The creation of the post of Director of Time officialised the long-standing practice, which in Bombay went back to the early nineteenth century, of the observatory director providing correct solar time to shipping and navigation through the daily dropping of the Time Ball on Bombay Castle. The Harbour Clock was synchronised with a time ball which dropped everyday at 1.00 p.m. through the "action of the automatic electrical apparatus"[53]. Next to the time ball and connected to the Harbour Clock was a gun at Bombay Castle which audibly announced the time to all within earshot of the area known as the Fort and Native Town, the business district, mercantile exchanges and wholesale markets of the city.

As the official keeper of Bombay's true time, Moos had, at his own initiative and with the official blessing of the Port Trust, begun to institute changes in the dropping of the venerable time balls in the Harbour shortly after assuming his post as Time

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5 2 MSA General Department vol. 122 / Compilation no.790, 1905-1908, "Standard Time, Proposal for the adoption of a Standard time for general purposes all over India", p.18

5 3 Observatory Report (1883-4) – its operations were often interrupted by harsh weather or poor repair, and often the ball was dropped by hand, or a flag dropped in its place.

Director. The proposal for IST had noted that not only did the city maintain local time and railway time concurrently, but a *third* time existed called "port-signal time". In his reply to the proposal, Moos revealed himself as the initiator of this new time signal in Bombay. In his reply, Moos stated that since June 1900, the time balls at the Bombay Castle and the Prince's Docks were being dropped at a different times.

> The signals from the latter place are almost exclusively intended for the purposes of shipping as it is much nearer and more centrally located in regard to the Harbour than the Castle. The ball dropped at the Castle, though ordinarily intended for the purposes of the shipping, is also largely taken advantage of by the general public for securing correct local time. Up to 10th June 1900 the signals were communicated from the Prince's Dock at 12 noon and from the Castle at 1 p.m., both times being *Colaba mean time*. [...]
>
> Chronometers on board the ships all over the world, however, keep Greenwich time, and signals given at local times necessitate some calculations before they could be reduced and utilized for correction to Greenwich time. And as also the usual time of winding, &c., of the chronometers on board the Royal Navy and the Royal Indian Marine ships, and of the shipping generally, is fixed at about 8 hours in the morning, in order to meet the convenience of the shipping in the Harbour, a suitable change in the time of the signal at the Prince's Docks was found desirable and the Trustees of the Port sanctioned the proposed change from 11th June 1900.
>
> The change consisted in dropping the ball – instead of at 12 noon, Colaba mean time – at an odd local hour, 7h. 51m. 15.7s. (near enough 8 a.m.) but corresponding to a full hour – 3h. 0m. 0s. of Greenwich time. This alteration, while enabling the shipping to rate their chronometers just about the hour fixed for winding their chronometers, also helped them in finding the error and rate of

their chronometers, rendering the operations as simple as possible. The Castle signals continue, as before, to give a full hour of the Colaba mean time – 13h. 0m. 0s.[54]

The time ball and gun at the Castle continued to signal local solar time at Bombay, to announce the hour the public in the Fort and Island City who kept Bombay Time. However, in 1900, as related by Moos, the port time ball at the Victoria and Prince's Docks began signalling a time in exact and simple relation of GMT+5. This time was signalled five years before the proposal for IST was circulated. It was a sign of the times, also noted by Moos, that by the late nineteenth century more than three fourths of the world's shipping and navigation employed the Prime Meridian of Greenwich.

By the turn of the century, this bustling commercial capital of India was the site of multiple and overlapping times: *Port Signal Time* as introduced by Moos in 1900 for directing navigation in the busy commercial docks, and for rating marine chronometers to Greenwich Mean Time; *Madras Time*, or what was officially known as *Indian Mean Time*, as observed by the railways and telegraphs and other arms of the supreme Government of India since 1883; and what Moos called *Colaba Mean Time*, or *Bombay Time*, the local solar time, for all offices of the provincial Bombay Government, shops and establishments, and the general public. We can image that

5 4 MSA General Department Abstracts of Proceedings, 1905, Serial no. A-33, "Proposal for the adoption of a Standard Time for general purposes all over India", p.105.

this patchwork of clock times often resulted in genuine confusion by travellers, shipping and commerce which crossed the boundaries between Bombay, Indian, and Greenwich times, and grief to astronomers, marine navigators, geologists, meteorologists, and scientists such as Moos for whom the multiplicity of times "proved a very serious obstacle to scientific work". As meteorologist N. Leslie complained "when observers send in statements as to hours at which meteorological events happen it is often quite uncertain whether the time they quote is Madras time or local time"[55]. In the words of the Meteorological Reporter, "for scientific purposes, multiplicity and uncertainty are an abomination".

While colonial scientific authorities, including Moos and his British colleagues, were unanimously in favour of IST, the familiar opposition of the commercial and political bodies in Bombay posed a particularly thorny set of problems in standardising the city clocks, to bring absolute uniformity in time keeping. Initially the Bombay Government was optimistic that the patchwork of different times could be resolved into one Indian Standard Time in Bombay.

Through negotiations with the Chamber, Corporation and Port Trust, officials hoped that the separate shipping time signalled by the Castle Ball would "fall into disuse" as railway mean time and shipping times were "in some easier relation with Greenwich time than at present". In this context, another official remarked, the effect of the new proposal by Government to substitute "Standard Time for what we call Railway

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5 5 ibid.p.103

Time" would mean a "change of 8 minutes 50 seconds which really do nobody any harm and there is a strong body in favour of it"[56]. Another official observed that "the change in railway time will probably increase the inconvenience of retaining local time in Bombay because it will not be so easy for the travelling public to take into account at once a difference of 38 minutes and 50 seconds as the present difference of half an hour [between railway time and local time]; and the result may be a change in public opinion as regards the substitution of standard time for local time in the City"[57]. However the Governor anticipated that such subtle changes could stir a world of protest:

I wish somebody would get the Port Trust and the 'Director of Time' to alter the 'Castle Ball' and the 'Colaba Mean Time' in the same informal way as the Port Trust Ball has been altered. Nobody would be any the wiser especially if a conspiracy with the gun and the University Clock Tower were properly hatched. So long as Government don't order it, I fancy it would go quietly through a bloodless revolution![58]

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5 6 MSA General Department vol. 122 / Compilation no.790, 1905-1908, "Standard Time, Proposal for the adoption of a Standard time for general purposes all over India", pp.11-12

5 7 MSA General Department vol. 122 / Compilation no.790, 1905-1908, "Standard Time, Proposal for the adoption of a Standard time for general purposes all over India", p.24

5 8 MSA General Department vol. 122 / Compilation no.790, 1905-1908, "Standard Time, Proposal for the adoption of a Standard time for general purposes all over India", p.26

Bombay Time, 1905-1906

Since the early nineteenth century in the Island City of Bombay, the transmission of time to boats in the harbour by sight of the daily time ball drop, and to the merchants and public of the Bombay Castle and Fort by sound of the Gun, made the time both visible and audible to the urban public. These signs were of the local solar time in the city, by which most clocks throughout the city – except the railways and telegraphs – were synchronised. This culture of time-keeping preceded the official acquiescence, in 1883, to a separate "Bombay Time" following the controversies over the local adoption of railway time.

And in the two decades which transpired before the proposal for Indian Standard Time, clocks proliferated throughout the rapidly industrialising city. By the turn of the century, there were few neighbourhoods in Bombay far from the gaze of a public clock on a public building, civic or religious monument, or railway platform. Just as the determination of longitude established the true time signalled to the city, converting space to time, the face of the public clock and the mechanical movement of its hands, converted time back into space, the public spaces of the city. On railway platforms, public buildings, and in government offices of the British; in the textile mills and factories employing tens of thousands of operatives; and also in public parks and gardens, on temples, mosques, and public shrines. Clocks were a public sign of modernity in the urban environment, especially in the numerous public clocks endowed by native merchants and philanthropists. While both rulers and ruled were

subject to the rhythms of clock time, the clocks signalled their difference as much as simultaneity, as the city maintained its local time in parallel with railway time.

The most symbolically central of public clocks in the city was the Rajabai Tower, also known as the University Clock Tower. It was maintained by Bombay University after being gifted by the cotton merchant and financial speculator Premchand Roychand, the free-wheeling broker who had profited from the mania in cotton shares which had engulfed Bombay during the American Civil War, when the Lancashire textile industry's supply crisis resulted in the emergence of the city as one of the world's great cotton manufacturing and trading centres. The clock tower was named for Premchand's mother, Rajabai, and endowed in 1869, perhaps in an effort to protect his family name after repaying his debts incurred in collapse of the cotton share mania, and failure of the Bank of Bombay at the end of the American War in 1865-1867 (see chapter 1).

Designed shortly before his death by the renowned Victorian Sir George Gilbert Scott – the architect of St Pancras Station and the Albert Memorial in London – with the medieval intricacy which was the hallmark of the Gothic Revival[59]. The Rajabai Tower was constructed according to his instructions in Bombay by engineers of the Public Works Department. It was studded with statuary and stained glass depicting Orientalist costumed types of the various races and communities of the subcontinent,

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5 9 On George Gilbert Scott, see http://www.vam.ac.uk/collections/metalwork/hereford/george_gilbert and http://en.wikipedia.org/wiki/George_Gilbert_Scott.

executed by students of the Government-run J.J. School of Art under the direction of Lockwood Kipling, the father of Anglo-Indian writer Rudyard Kipling.[60]

When construction of the tower was completed in 1878, it remained without a clock works until the University raised funds to import the machinery from England in 1882. When the University Syndicate announced it could not bear the cost of lighting and operating the four faces of the clock, it was decided that the Corporation and the Government should split the costs. When the controversy over which time would be displayed erupted in 1883-1884, the Corporation passed a resolution that the clock would maintain Bombay Time, as the University also did. Governor Fergusson refused to sanction the Government's support and insisted on Madras Time.

The University passed the measure, and Fergusson was disgraced when in June 1883 the Government announced that it would bear its half of the cost of illuminating the University Clock Tower, which henceforth kept Bombay Time. Twenty years later, in 1905, officials remained anxious to secure the agreement of the University Senate to set their public clock to Indian Standard Time. It was suspected that the University might follow the example of the Corporation, as both had in their ranks larger numbers of elected Indian members. Luckily, Dr Mackichen, the Scottish vice-chancellor of Bombay University and proprietor of the Rajabai clock tower, was

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6 0 http://en.wikipedia.org/wiki/Rajabai_Tower and Sharada Dwivedi, Bombay: The Cities Within (Bombay: India Book House, 1995), 94

strongly in favour of IST and the Syndicate of the University recommended its adoption.

Throughout the rest of the country, Indian Standard Time came into effect on midnight of 1 July 1905. It was immediately adopted by all the major Indian railway companies, and its use was ordered in all offices of Government in the Bombay Presidency, *except* Bombay City (and Aden, then administered as part of British India). In numerous letters and files, officials indicated their fear of negative public opinion and were weary of a repeat of the controversies of Madras Time twenty years earlier. After the suggestions of resistance in the Corporation, the Chamber of Commerce informed Government in June – less than a month before the changes were to be effected across India – that its members had voted against IST, with 17 in favour of standard time and 22 for the retention of local time[61]. This was one of many votes on the IST proposal which took place in the Bombay Chamber, and in the Corporation, flip-flopping on its adoption in Bombay City based on the prevailing political winds from mid-1905 to early 1906.

Treading lightly, city authorities tabled the proposal for further discussion, postponing adoption for several months in the city. Care was taken to send notices in advance to the Editor's Table of English and Indian language newspapers several months beforehand. Key officials in the Bombay Government attempted to bring

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6 1 Letter from C.H. Armstrong, Chairman and Leslie Rogers, Secretary of the Bombay Chamber of Commerce to the Acting Secretary to Goverment, General Department, Bombay, 14 June 1905, in ibid., pp.131-133

dissenters on board. Government hoped to extend Indian Standard Time to Bombay City by the following year, preferably 1 January 1906. To this end, W.D. Sheppard, the Municipal Commissioner, convened a meeting in October 1905 to elicit the opinions of commercial and civic institutional heads in the city. This meeting took place a week after the Municipal Councillors had met and narrowly voted in favour, 27 to 21, in favour of Standard Time. Then in August and September 1905, the Bombay Chamber of Commerce and Port Trust had – a few months after its adoption throughout India – shifted their stands in favour of Standard Time, by wider margins than in the Corporation. However, both bodies, whose operations placed them at the heart of the city's commercial and maritime interests, urged caution before issuing orders for its adoption in Bombay City until there were "a large majority of the inhabitants of Bombay in favour of it". The Bombay Presidency Trades Association, a body of European merchants represented by one Mr Copplestone, similarly hedged their approval by noting that the new usage "would be of no advantage until the public clocks are altered to standard time"[62].

Clearly the officials and private Europeans whom Sheppard had called for his meeting were anxious about the possible backlash from prominent Indians, and the public at large. The heads of the Chamber, the Mill Owners Association, and the British civil servants like himself heading the Port Trust and the Railways clearly did not represent "native opinion". Sheppard realised that, while only two "Native

6 2 Letter from the Secretary, Bombay Presidency Trades Association to the Secretary, General Department, 2 September 1905, in ibid., p.139

gentlemen" (Indians) were present at the meeting, and only one was opposed to Standard Time, "I gathered... that the proposed change does not commend itself to the Marwadis [sic] and traders of the bazaar". He decided this based on the opinion of the sole dissenter at the Municipal Commissioner's high table, from the Marwari merchant caste which dominated Bombay's thriving cotton textile mill industry. Manmohandas Ramji was an energetic politician and merchant who, as, municipal councillor, had voted against IST just weeks before in a closely fought battle in the Corporation – whose Councillors were nearly all Indians by the turn of the century. Separately from his official duties with the Corporation, as chairman of the Native Piece Goods Association, he had convened a meeting of its 250 members which unanimously opposed Standard Time because of their twin fears of "interference with religious observances" and "increase of working hours".

Noting this dissent, Sheppard soberly reflected on the possibly differential effects of the proposed standardisation in colonial Bombay and its urban spaces segregated by race and class, with a primary divide between the "native town" or Indian bazaar and the colonial industrial city of offices, mills and docks. "I am of the opinion that if introduced into Bombay on, say, January 1st next its actual adoption will in the first instance almost certainly be limited to the business offices outside the native town, [to all mills and factories], to Clubs and private residences as well as presumably to all Government Offices and Institutions... It is not however improbable that the example so set forth sooner or later be followed by the bazaar and Standard Time if

once introduced become within a very few months the generally accepted system of time in Bombay"[63].

Merchants' Protest

Sheppard's confidence in the inevitability of the bazaar falling in line with the new standard was interrupted by the protests over the Partition of Bengal in September 1905, whose political fallout transformed the stakes of standard time in Bombay for nationalist politicians. The proposed partition of Hindu-dominated West Bengal from Muslim East Bengal is regarded as a turning point in the growth of the Indian nationalist movement, with a immediate and furious local resistance forcing Curzon to finally withdraw the partition plan, though the effect of the opposition was to radicalise and fragment Indian political factions angling for a greater share of state power into competing religious and communally-based groups[64]. This event in Bengal, and the protests which followed, completely changed the stakes in the battle over standard time in Bombay in late 1905.

The partition plan was announced by Lord Curzon while the Government of Bombay was in the midst of consultations with municipal corporators sensing their political

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6 3 Letter from W.D. Sheppard, Municipal Commissioner of Bombay, to the Secretary to Government, General Department, 12 October 1905, in ibid., pp.99-100

6 4 Sumit Sarkar, The Swadeshi Movement in Bengal, 1903-1908. (New Delhi: People's Publishing House, 1973).

opportunities to confront the state in the newly charged political atmosphere. The archive contains numerous petitions, mostly by associations of petty bourgeois grain, cotton and piece good merchants who vocally opposed IST in protests meetings organised throughout Bombay in the last months of 1905. This opposition was a measure of the rising influence of these merchant and trading groups in city politics, led by politicians who represented their interests to the colonial state from their seats in the Corporation and their position in the growing nationalist movement[65].

These petty bourgeois groups, connected by caste and community ties to their leaders in the Municipal Corporation, were the leading voice of public protest against IST in the months prior to its adoption. Led by Indian civic elites from the ranks of both moderate as well as radical nationalists, these lower middle-class traders and merchants would join with office employees and factory workers in refusal of the new clock time, observing the 39 minute difference of Bombay Time as a anti-colonial position affirming the social autonomy of these groups against the colonial state.

The city's major wholesale markets – most located in the Native Town north of the Fort – were crucial arenas for modern time discipline. Time calculations were essential to the price movements of bulk commodities such as cotton and grain, as well as for regulating flows of credit and money in the *bazaar*. The public clocks crowning the municipal and private markets were symbolic of their role in regulating

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6 5 A.D.D. Gordon, Businessmen and Politics : Rising Nationalism and a Modernising Economy in Bombay, 1918-1933 (Columbia Missouri: South Asia Books, 1978).

the city's trade and consumption patterns. The petitions by the Indian traders, returned on the letterheads of the major merchant associations, cited both the adverse affect on the indigenous money market and urban commercial life, as well as the disruption of religious and social practices which would be entailed by a changing of the clocks, these petitions articulated a new idiom of anti-colonial politics emerging amongst urban politicians in early twentieth century colonial India. Significantly, they also framed a nationalist discourse on science and modernity, through which these civic elites sought to mobilise the masses against the colonial regime of standard time.

First into the fray was Manmohandas Ramji, chairman of the Bombay Native Piece Goods Merchants Association, which passed a resolution at a meeting in September:

1. That this Association is of opinion that the vast majority of the population, which is purely native, and especially the trading and mercantile classes, are not aware of any cogent and convincing reasons having been adduced for the proposed substitution of Standard for Solar Time.

2. The substitution will greatly inconvenience the population in more than one way, notably in their social and religious matters.

3. That the Government, therefore, should be respectfully informed that this Association regrets it cannot approve of the change.[66]

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6 6 Letter from Manmohandas Ramji to the Chief Secretary, Government of Bombay, 29 September 1905 in MSA General Department vol. 122 / Compilation no.790, 1905-1908,

Hardly a week later, Lakhamsee Napoo, sitting corporator and chairman of the Grain Merchants Association, organised a similar meeting and passed an almost identical resolution citing the reversal of the Chamber's earlier stance against IST. Napoo identified the Chamber and Government as " mostly European or non-native" bodies out of touch, and requested "that Government will be pleased to consult native public bodies" before sanctioning the replacement of local time. A resolution of the brokers, traders and members of Bombay Cotton Exchange in early November 1905 stated that the gathering was "strongly opposed to, and expresses its emphatic disapproval of, the proposed introduction of Standard time in the City, advocated by several bodies and is of opinion that the proposed change will be a source of great inconvenience to those interested in the Cotton trade of this City, especially in the performance of their social, religious, and mercantile duties"[67].

All of the petitions drew a connection between the purely secular conduct of business and trade, and the social and religious practices of the merchant communities. The partial adoption threatened to disrupt the coordination between the different sectors of the city's business community, which comprised of wholesale traders, grain and cotton merchants, and other Indian businesses which controlled the city's markets for money, credit and agricultural commodities, and the European business houses which

"Standard Time, Proposal for the adoption of a Standard time for general purposes all over India", p.233-235

6 7 Letter from Bhaidas Narottamdas, Vice-President of the Bombay Cotton Exchange Co. Ltd. to S.W. Edgerley, Chief Secretary to the Government of Bombay, 4 November 1905 in ibid., pp.91-93.

dictated commercial policy, monopolised the export trade and controlled trans-shipment through the city docks and railways. Napoo noted that the change in clock time had especially disrupted Indian money and credit networks, organised around promissory notes called *hoondi*, "amongst the native merchants the Hoondi business – a business of great importance and daily occurance (sic) – and which is the heart and soul of trade – has been suffering the most".[68]

The most significant petition, a rich document which rewards closer reading, came from a public meeting 22 December 1905, a week before the directive on Indian Standard Time was to be adopted in Bombay City to bring it in line with IST. A mass meeting of more than 15,000 people was held in the public *maidan* (park) at Madhav Baug in Bombay to protest the foreign imposition. No doubt incited by more than just the change of clocks – the violent protests against Curzon's Partition of the province of Bengal were still smouldering in other parts of India – the meeting resulted in the signature of a petition which was submitted to Government on 28 December 1905, days before the old practice Bombay Time was to be finally abolished in the city.

This December petition was authored by three Indian politicians – two Marwari Hindus, Manmohandas Ramji and Callianji Amurchand and one Khoja Muslim, Ahmedbhoy Habibhoy. Reproduced as an appendix to this essay, it is a rich document

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6 8 Letter from Lakshamsee Napoo to the Chief Secretary, Government of Bombay, 14 June 1906 in MSA General Department vol. 122 / Compilation no.790, 1905-1908, "Standard Time, Proposal for the adoption of a Standard time for general purposes all over India", pp.303-305

articulating the dilemmas of nationalist politics and colonial rule at the turn of the century. The discourse of the petition shifted between scientific criticism and social protest, carefully articulating a solidarity between Hindu, Muslim, and other religious communities, based on their shared secular campaign against the colonial state. This display of inter-communal solidarity was a crucial element of nationalist politics in the wake of the divisive attempt by the state to Partition Bengal into Hindu and Muslim provinces in October 1905.

> The adoption of Standard Time in Bombay is highly prejudicial to the interests of religious communities. They offer prayers and perform religious ceremonies at particular times which indicate the positions of the sun in heaven. Thus for instance 12-30 p. m. is the time of the "Azan" of the second prayer of the Mohammedans [Muslims], which if Local Time be standardized would be 11-51 a. m., when the sun would never be overhead. Thus the adoption of Standard Time would cause a great confusion and inconvenience among the Mohamedans. It would also interfere specially with certain daily religious rites, prayers and so forth which every Hindu, Mohamedan and Jew has to perform in consonance with his religious belief.

Using the issue of standard time as a secular and non-sectarian platform which addressed the city's various religious communities, the petition proclaimed the authority of modern science for local solar time in Bombay, as opposed to the unscientific proposal for IST, which it associated with the convenience of the British:

> The adoption of Standard Time in Bombay would be against the principles of modern science. For, since the time when clocks were manufactured in the 16th century, time in different parts of Europe and America was fixed according to the degrees of longitude, in which the places were

> situated. In India, time was accordingly fixed for different places about 200 years ago or more, since when it is going on smoothly. Thus the Local Bombay Time was fixed to be 4 hours and 51 minutes, Madras Time 5 hours and 21 minutes and Calcutta Time 6 hours more than the Greenwich (London) Time. There is a difference of 4 minutes to every degree of longitude, every one of which to the East indicates 4 minutes more and to the West four less than the said Greenwich Time. Thus the arrangement of time is based upon the strictest principles of modern science and not upon the convenience of a microscopic minority of officials and a few hundred foreign visitors. Thus the adoption of a system of timing opposed entirely to the natural mean solar time is in the present age, a retrograde movement which should never be adopted unless there are most solid grounds and weighty reasons, adduced for such a step.[69]

The petitioners recalled the controversies over the adoption of Madras Time or Railway Time twenty years earlier, when Bombay was not agreeable to anything but keeping its own local time, stating that since then "the entire population of Bombay has not known hitherto of any time except the one indicated by the sun, which by a consensus of scientific opinion is deemed to be the right and proper".

> It is probably necessary that the Railways should have one uniform time and they have got it. But it cannot be that what is good on Railways is good for the population at large. There is not an iota of evidence yet advanced before the public that there has at any time *demand* from millions of the vast population of the country that Standard Time was essential or requisite. If then there be no popular

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6 9 Letter and Petition from Ahmedboy Habibhoy to the Chief Secretary, Government of Bombay, 28 December 1905, in MSA General Department vol. 122 / Compilation no.790, 1905-1908, "Standard Time, Proposal for the adoption of a Standard time for general purposes all over India", p.259

> demand for a change, and if the change itself is accompanied by no advantage, where we respectfully beg to inquire, may be the utility of forcing it[70].

While rejecting the scientificity of Indian Standard Time as a foreign imposition, the petitioners did not cite any technical or scientific rationale apart from their defence of the people's natural habit of rising and retiring by the sun, nor did they consider the opposing arguments for uniformity and rationalisation in time-keeping offered by Government and Indian scientists such as N.A.F. Moos in their proposals for the adoption of IST. In the petitioners' nationalist discourse, social practice was more conclusive than scientific proof in establishing the true time.

They claimed that "we are not in a position to examine and judge what may be the superior advantages to this proposed artificial time on the natural one still in vogue". "If people in town have hitherto never been reconciled to even Madras Time, it is logically apparent that much less could they be made to reconcile themselves to this new fangled Standard Time"[71].

Office Hours

The politics of the new standard time was most directly felt in the changes which it would entail in the timings of business transactions and office hours throughout the city. Quite apart from their lofty appeals to the principles of modern science, the

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[70] ibid., p.261

[71] ibid., p.260

petitioners warned the Government that "confusion and loss will be the sure upshot if Standard Time be adopted in Bombay, where there are more Offices, Mills, and other working concerns than in any other single place in India". The shifting of the clocks would mean shorter days in the city, and the large private employers "would clamour for the late time and thus work will be delayed and masters will suffer", warning that such confusion could result in factory employees "making strikes". Insistence on changing the clocks could invite industrial action on a wide-scale.

The letters column of the *Bombay Gazette*, an English language newspaper associated closely with officialdom and European business, was an unofficial forum for Indians to address their complaints to the authorities and ruling elites. An letter to the editor from January 4, 1906 – signed anonymously by a group of Indian shop Assistants – captured the problems created by the partial adoption of Indian Standard Time in the city, several days after its introduction in 1906.

> Sir – The Standard Time which has been universally adopted will certainly facilitate business. But we see that many of the European shops are not carrying out instructions to the spirit when they start business forty minutes earlier than usual. By doing this they are not only inconveniencing the employees who stop at a distance, but also to a certain extent lose business. Because it would be futile for shopkeepers to expect customers at so early an hour, and it would also be impossible for them to close when the shop is full of customers in the evenings, and if they close they do so reluctantly. As such we fail to see why only the firms connected with the Bombay Trades Association should observe the same (nominal) time, when the whole of Bombay including Government and Public Offices, also the Army and Navy Stores (to name one only), are adopting a

> different feasible time viz., half an hour later. By Standard Time is meant keeping one time only throughout India and not to inconvenience, as it does, any one concerned. In these circumstances, we beg you will take up our cause and redress the sufferers. – SHOP ASSISTANTS

Another letter in the same column, that day requested the authorities for a change in the hours of city hospitals and dispensaries, which had been from 7.00 to 10.00 a.m. and 5.00 to 7.00 p.m. "As the sun rises in this season (winter) at about 7-17 a.m., (Standard time), there would scarcely be any attendance as early as 7 a.m"[72]. Such complaints related to moving back the clocks more than half an hour were widespread in the new year of 1906. This was in spite of the Government's directive in November 1905 to adjust its own office hours in various departments to offset the change in the clocks. According to Bombay Time, the secretariat's hours were from 10.30 a.m. to 5.00 p.m. "According to Standard Time the above hours would be 11-9 a.m. to 5-39 p.m". To avoid such "awkward minutes", the suggestion was to move the hours back by 30 or 45 minutes[73]. "Government deem it advisable and lively to meet the public convenience that when Standard Time is introduced the new hours for opening and closing Govt offices should differ from the old by the same number of minutes".

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7 2 *Bombay Gazette*, "Letters to the Editor" (no page number), 4 January 1906

7 3 Government Resolution no.6360, "Prescribing the adoption of Standard Time in all Govt. institutions and Offices from and after the 1st January 1906, 15 November 1905 in MSA General Department vol. 122 / Compilation no.790, 1905-1908, "Standard Time, Proposal for the adoption of a Standard time for general purposes all over India", p.214

In the state archives, there are notes from a secretary to the Governor that "it will be better to issue no orders but to let the heads of departments settle the office hours for themselves"[74]. The railways, posts and telegraphs, and other departments of the Bombay Government all agreed to change their working hours to either 11.15 a.m. to 5.45 p.m. or, which was more widely adopted, 11.00 a.m. to 5.30 p.m. However it is evident from the letters to the newspapers by shop assistants and patients' groups that leaving such decisions of office hours to the bureaucrats in charge of their departments resulted in mixed results – private European shops, and municipal hospitals, began opening earlier in the new year, inciting resentment and protest.

The city's textile industry was, like its state bureaucracy and commodity markets, a laboratory and arena for modern time discipline, where popular responses to the new measures can be understood. In this respect, mill workers' responses to Indian Standard Time can be seen as a measure both of their consciousness of clock time, and their power to resist the directives of their employers. The numerous large-scale textile mills which by the turn of the century employed a hundred thousand formal workers, affected the rhythms of life and work of an even larger population in the neighbourhoods known as "Girangaon" (the "village of mills" in Marathi) which grew north of the old colonial Fort and Indian native town from the 1870s[75]. Both behind the factory gates as well as across the working-class neighbourhoods of central

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74 ibid., p.227

75 Neera Adarkar and Meena Menon, *One Hundred Years One Hundred Voices: the Millworkers of Girangaon : an Oral History* (Calcutta: Seagull Books, 2004).

Bombay, nearly half the city's total population lived and worked by the siren or *bonga* that sounded across the Island City three times a day, announcing the beginning and ending of the mill work-shifts.

The Jacob Sassoon Mill in Lalbaug, in the mill districts of central Mumbai, was one of the largest factories in the city, spread over thirty acres and employing over 4,500 hands in spinning, weaving and dying operations. It was owned by the Baghdadi Jewish merchant prince E.D. Sassoon – who named each of his three mills in central Bombay after one of children. While some alleged a connection between the owners' exotic origins and their decision on 5 January 1906, first among the mill-owners, to adjust the mill clocks and sirens to Indian Standard Time.

While, like Government, the Sassoon Company also adjusted for local time by changing their clocks, when workers came to the factory gates for the morning shift, they found the clock time had moved from 5.30 a.m. to 6.09 a.m. "As soon as they saw that their mill clock was no longer telling truthful time, that very day they went on strike and smashed the clock by throwing stones at it". This was reported by D. Gosthing, an English civil engineer who had designed and built the factory for the Sassoons, and served as a nominated member of the Municipal Corporation for six years. Gosthing, as architect and director of several mills in Bombay knew "their inner working. As soon as our Mill Agents heard what had happened to the Jacob Sasoon Mill clock, they promptly dropped the subject like a hot potato, and went

back to Local time"[76]. While the true time had not changed in relation to the sun, the clock became a target for their anger, and the workers went on a flash strike. The management quickly gave in and reverted to Bombay Time within a week[77].

Splitting the Clocks

As Gosthing related of this brief and violent episode which stymied the adoption of IST in the city's textile industry, "we have in Bombay nearly 100,000 mill hands who with their wives and families probably number 300,000 souls. After a time, the Bombay Corporation, containing many Mill Agents, put the Corporation clocks back perforce to local time, the facts as to their Mill Employees being too strong for them"[78]. Goshthing's account of the stoning of the clocks in Sassoon Mills comes from a long letter which he penned to the Governor of Bombay two years later, in 1908, about "this nuisance of the two times".

From 1906 onwards, resistance hardened, and clock time was effectively split. The earlier patchwork of clock times hardened into a political and institutional divide

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7 6 Letter from D. Gosthing to His Excelleny Sir George Clerke, Governor of Bombay, 13 July 1908 in MSA General Department vol. 122 / Compilation no.790, 1905-1908, "Standard Time, Proposal for the adoption of a Standard time for general purposes all over India", p.327 (emphasis mine)

7 7 Jim Masselos, "Bombay Time," in Intersections: Socio-Cultural Trends in Mahahrashtra (Hyderabad: Orient Longman, 2000), 177.

7 8 Gosthing to Clarke, pp.327-329

between groups contesting their hegemony over the governance of the city and the powers of the colonial state. Imperial bodies with an all-India scope – the railways, posts and telegraphs – as well as the Port Trust[79] and the entire bureaucracy of the Bombay Government switched over to IST, with adjustments in their office hours to accommodate local convenience and keep *true time*. On the other side of the growing political divide, native civil society groups such as the associations of merchants and traders, and the Mill-Owners Association, as well as bodies like the Municipal Corporation where Indian members held the balance, held fast to Bombay Time. Gosthing observed that local time was kept on all "private clocks" in the Native Town and in private markets through the winter of 1905-1906. With the sporadic confusions and protests in offices and factories in the eve of the new year of 1906, and the growing unrest against the Government in the Corporation organised by

7 9 The demise of "port signal time" and the difference between the hours signalled by the time balls at the Docks and Castle, and their alignment to Indian Standard Time, was secured by Government after negotiation with the Port Trust in December 1905:

"All Port Trust Offices which heretofore opened at 10 a.m. and closed at 5 p.m. Bombay Time should open at 10-30 a.m. and close at 5-30 p.m. Indian Standard Time and the hours of any Port Trust Offices which opened and closed at hours other than 10 a.m. and 5 p.m. should be correspondingly altered.

"From 1st January 1908 the Time Ball over the Clock Tower of the Victoria and Prince's Docks should be dropped at 5h-30m-0s Indian Standard Time instead of 7h-51m-15.7s Bombay Time as heretofore and the Time Ball at the Bombay Castle should be dropped at 2 p.m. Indian Standard Time instead of 1 p.m. Bombay Mean Time as heretofore."

From Bombay Port Trustees Resolution no.491, 21 December 1905, in MSA General Department vol. 122 / Compilation no.790, op.cit., pp.251-253

Indian politicians, merchants, employees and workers, the proposal for extending the uniformity of time by IST in fact produced a splitting of clock time between IST and Bombay Time.

The restive Indian members in the Municipal Corporation sensed an opportunity to jump on the political bandwagon over Standard Time incited by its more senior members. Sir Bhalchandra Krishna, a member of the Corporation, again petitioned the colonial state in February 1906 after another mass meeting in Madheo Baug, "to return to local Bombay Time in the same way as was the case when Madras time was in vogue for railway purposes" and inviting leading citizens and corporators "to give every help in their power to remove the great hardship from the shoulders of the vast majority of the inhabitants of this city". This provoked a confused response from Government. One official complained that "the Corporation and the general public know perfectly well that we have no control over their clocks". "The Native Community are divided in opinion. I can not help thinking that a good deal of the opposition comes from leaders and that if the bulk of the people were left alone they would [...] accept the change with absolute indifference"[80].

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80 Letter from Sir Bhalchandra Krishna, Chairman of the Public Meeting held at Madheo Baug on the 21st February 1906 to the Chief Secretary, Government of Bombay, 26 February 1906, in MSA General Department vol. 122 / Compilation no.790, 1905-1908, "Standard Time, Proposal for the adoption of a Standard time for general purposes all over India", pp.273-281

However, the protests incited by the corporators did not die down, and in direct response to the meeting and public petition organised by Sir Bhalchandra, in April 1906 the Corporation reversed its resolution of September 1905 in favour of Standard Time. They requested the Municipal Commissioner to revert to Bombay Time with effect from 1 May 1906. This reversal unsettled both the Bombay Government and the supreme Government of India, then camping in its summer capital at Simla. However, there was a calculated non-response by officialdom to what it saw as rabble-rousing by a few Indian politicians, once it satisfied itself that the mercantile community, and especially the Chamber of Commerce, was not prepared to follow the Corporation's example. An official from the Revenue and Agriculture Department of the supreme Government in Simla summed up this dismissive attitude "I would personally deprecate any course of action which would give the least suggestion that there is even a remote possibility of Govt being influenced by the Corporation's last vote in this matter. Once it is known any enquiry is being instituted the agitation will gain strength"[81].

This attitude of official non-response was where the matter stood in 1906. The Government held its ground, as did the Municipal Corporation and most other civic institutions which had registered their protest. The clock time of the city was effectively split between officialdom and the Indian public. This led to the ironic and anomalous situation described by historians and observers of the time in the heart of

8 1 Letter from Government of India Department of Revenue and Agriculture to General Department, 5 May 1906, in ibid., pp.293-298

the Bombay's old Fort district, the centre of its European and Indian business communities, Victoria Terminus railway station and General Post Office displayed IST on their public clocks. Just across the street, and further into the inner-city Native Town, the clocks in the Municipal Corporation Hall displayed Bombay Time.

This peculiar difference of 39 minutes was not just a stubborn hangover from the previous twenty years, when Bombay Time had been recognised and observed, both by the bureaucracy and officialdom, as well as by the Indian merchants and working public of employees and factory workers. From 1883 to 1905, there was an easily remembered and officially sanctioned thirty minute difference between Indian Mean Time and Bombay Time. This mattered most in dealings with the railways, telegraphs and other all-India institutions for people in the city. As noted earlier, in 1900 Port Signal Time, in direct relation to Greenwich, was also introduced for the convenience of shipping. However, from 1906, both the Bombay Government and Port Trust went over to Indian Standard Time from local Bombay Time – what astronomers and meteorologists also referred to as Colaba Mean Time, as observed at the observatory and transmitted via telegraphic signal to the time balls at the Bombay Castle and in the Victoria and Prince's Docks. Together with the railways and telegraphs – which adjusted only for the nine minute difference between Indian Mean and Standard Times – they shifted their office hours to account for this change to placate employees and workers. This patchwork of times and names operated by different agencies was on the night of 1 January 1906 abolished, at least officially, and the

imperial grid of railway, telegraph, and observatory networks were synchronised to a single time.

But most of the rest of the city remained on Bombay Time, led by the Municipal Corporation, which moved back its clocks in May 1906. On this side of the newly split clock time, nationalist leaders deployed the scientificity and conventionality of local solar time in what Gramsci called a "war of position" with the state[82], countering the language of modern reason with the facts of colonial subjection. IST and Bombay Time inscribed an distinctly new divide into urban civil society between the colonial ruling class and nationalist public opinion. The 39 minute difference must have proved a constant source of irritation and confusion to officials. In 1908, the accountant general of the Bombay Government, F.C. Harrison, proposed that the clock in the Corporation Hall be set to Indian Standard Time. The ageing Parsi lawyer and nationalist leader Pherozeshah Mehta, chairing the proceedings in the Municipal Corporation, moved a resolution to again refer the matter back to Government, requesting that other institutions move back to Bombay Time in deference to public convenience. This was seemingly a dead letter, and was the last attempt to broker a compromise, as the Government never responded.

In 1912, Mehta established what became one of the leading Indian-run English broadsheets representing urban nationalist opinion, the Bombay Chronicle. As with

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8 2 Antonio Gramsci, "War of Position and War of Manoeuvre," in *An Antonio Gramsci Reader: Selected Writings, 1916-1935*, David Forgacs (New York: Schocken Books, 1988), http://www.marxists.org/archive/gramsci/prison_notebooks/reader/q13-24.htm.

almost all other Indian-run papers in English, Marathi, Gujarati and Hindi in the city, the Chronicle maintained Bombay Time in their daily listings of public meetings, lectures, and theatre and cinema show times. When, in their engagements column, a listing was noted for official functions or meetings of European-dominated bodies, an "S.T." would be appended to their timing to denote Standard Time. Similarly, when in official correspondence the time noted was not standard, "B.T" denoted Bombay Time. It is rare to find a publication which noted both B.T and S.T., reflecting the concrete nature of the splitting of the clocks and the necessity of choosing your side in the colonial public sphere.

"B.T." & "S.T."

Bombay Time was a sign of of the ad-hoc construction of state power in colonial Bombay in the late nineteenth century, part of the patchwork nature of colonial rule. By the turn of the century, the city had emerged as a crucial node in imperial networks of command and control which extended across the subcontinent and the western Indian Ocean. Port cities were the head office and terminus of the railways and and telegraphs, as well as outposts for scientific observation and data-gathering. Clock time performed a key function in the coordination and control of people, money and machines in the urban context. However, the effort to standardize time confronted a multitude of visible and audible time signals in the urban environment –

public clocks and time balls, factory sirens and fort cannons, railway timetables and newspaper columns – as well as widespread public resistance to standardization for most of the city's modern history.

This revealed itself most vividly in the patchwork of times in Bombay. From 1870 to 1905, despite repeated "invitations to extend the uniformity" of clock time by imperial authorities, the city's true time was contested by rival scientific claims to longitudinal determination, competing standards offered by the colonial railways and imperial observatories, repeated defiance of scientific standards by civic elites and municipal authorities, and the urban public's embrace of local solar time, or "Bombay Time".

For colonial administrators and scientists, the city's non-adoption of Indian Railway Time in the 1870s – and vigorous protests against Indian Standard Time in the 1900s – demonstrated the stubbornness of its merchant elites and the superstitiousness of its masses of mill workers, office employees and petty traders. Nationalist politicians' efforts to dramatize and protest the "shocks" to the city's rhythms of work and worship by changes in the clocks turned public time into an insignia of civic protest. Bombay Time, viewed and heard throughout the city's divided urban spaces, connecting shifts in the textile mills, office hours in government and private firms, and trading in the city's commodity and credit markets. These social worlds in the colonial city were transcended in an attempt to frame the city's natural solar time as an arena for urban nationalism and mass protest. From 1883 to the turn of the

century, Bombay Time distinguished the city from its hinterland and the rest of India, but more than just by its facts of its historical geography as a colonial port city. By the turn of the twentieth century, Bombay Time became a signature of native difference, and a patriotic platform on which urban politicians could confront the colonial state, and mobilise Indian opinion in the cause of home rule and self-government.

From this perspective, the history of clock time looks less like the smooth unfolding of a single standard than a war of position fought out across a century by colonial scientists and administrators, municipal leaders and citizens in colonial Bombay. While both rulers and ruled rejected the patchwork of urban time and demanded a single standard, the splitting of the clocks demonstrated that what was at stake was more than the just the literal time of day. Bombay Time was a measure of the relation between colonizer and colonized, science and the state, and the city and its hinterland.

INTERLUDE

The guiding common sense amongst British administrators in the nineteenth century was informed by the 1857 Mutiny, which according to the ruling myth was sparked by British officers causing religious offence to their Hindu and Muslim soldiers greasing their rifle cartridges with the tallow of cows and pigs. The anxieties of the post-Mutiny colonial state resulted in a Victorian philosophy of laissez-faire in both

social and economic policy – treading lightly on the social practices and religious sentiments of the population, it was often unable to impose or unwilling to intrude deeply into the lives of its subjects.

The accommodation of Bombay Time by the Government in 1883 was one of many ways in which the city's governance reflected this particularistic construction of colonial power in its urban centre of command and control, quickly growing into an industrial and commercial hub in the wake of the share mania and the birth of factory industry in the textile mills. The urban colonial state accommodated local differences in a regime which co-opted native urban elites into colonial civic institutions based on a limited franchise of rent-payers, landlords and businessmen. The Municipal Corporation, elected on a restricted franchise of elite rate-payers under its 1888 constitution, was the main arena for aspiring Indian civic leaders and party politicians to entrench their interests in the city's affairs by mobilising public opinion, and petitioning the state to redress grievances.

The arrival of the plague epidemic in Bombay in 1896 transformed this regime. The authoritarian response of the colonial state to the outbreak of plague throughout India from 1896 to 1900, and the native response to this unprecedented intervention into the homes and bodies of its subjects, deeply politicised the urban population, and dramatised the invasive powers of quarantine and demolition by the state. It also revealed the limits of the old liberal elites to control the actions of the colonial state.

The turn-of-the-century campaign around Bombay Time took place within a political context in which the elites of late Victorian Bombay wanted to shore up their public credibility in the wake of the plague, build new alliances with petty bourgeois merchants and tradesmen in the bazaar, and rally support in the factories and neighbourhoods of the vast textile mill districts to the north of the Fort and Native Town.

The ineffectiveness of these colonial politicians of an earlier generation, now styled as loyalists or "Moderates", was dramatised by the plague epidemic as the colonial state extended police surveillance, medical and sanitary intervention across India, with particular focus on the port cities which were feared to transmit the virus. Increasing confrontations between an intransigent and paranoid colonial state and a radicalised nationalist elite set the context for the rising influence a new generation of anti-colonial politicians, styled as "Revolutionaries". Most important among these was the editor and author of political and religious tracts, Bal Gangadhar Tilak, who led a restive, anti-colonial wing of the Indian National Congress opposed to the moderate tactics of negotiation and polite protest of the earlier generation of civic leaders in Bombay, and with a more strident, religiously inspired rhetoric and support of armed resistance to an increasingly intrusive and violent state apparatus.

The dramatic split between Moderates and Radicals within the nationalist movement at the turn of the century foreshadowed the later turn within party politics to the popular campaigns of Mahatma Gandhi in the 1920s, and the mass nationalism in the

thirties and forties. The central problem for these politicians – who at the turn of the century were still comprised of lawyers, bureaucrats and professionals based in the port cities – was how to mobilise the feuding urban factions on a wide enough platform and message to address the masses while restraining the tendency of civil disobedience to turn violent, and secular protest to turn religious.

In this polarised political context at the turn of the century, the connection between city elites and rural subaltern classes, secular politics and religious protest, and moderate and radical anti-colonial politics was dramatised by the controversy over Indian Standard Time (IST) in 1905-6. Urban elites in Bombay protested against a new attempt by the Government of India to substitute Indian Mean Time (railway time, Madras Time) with a new form of standard time, universally known today as IST. This new standard would bring the railways, telegraphs, and, its proponents hoped, the rest of the country into perfect alignment with a single time zone assigned for the whole of British India of *precisely* 5 hours and 30 minutes east of Greenwich.

When the controversies over Indian Standard Time were raging in Bombay, M.K. Gandhi was still a young lawyer and amateur politician, working for social reform and immigrant rights amongst the Indian diaspora in South Africa. Gandhi came from a merchant community Gujarat, and had practised a lawyer in Bombay. Like other

Indian nationalists in the early twentieth century, his political language and practice was evolving in response to the need to build a mass base of resistance to the colonial state. Upon his return to India in 1915, Gandhi was already well regarded in elite nationalist circles in Bombay for his political and social activities on behalf of the Indian community in Durban. This was ten years after the splitting of time in the colonial city and the movement for Bombay Time. As we have seen, these nationalist leaders used the issue as a platform to agitate against the religiously divisive policies of the colonial state, and Bombay Time became both an insignia of civic difference by city politicians, and a symbol of anti-colonial defiance to their followers amongst urban merchants, employees and workers.

Gandhi, on his return to India from South Africa in 1908, would fashion his message of *ahimsa* (non-violence) and *satyagraha* (truth power) in an eclectic political-religous idiom in response to these twin dilemmas of nationalist politics. Violent attacks on the state justified further repression by the in the name of law and order, and the expression of differences between Hindus and Muslims cemented the British policy of divide and rule, both demonstrating India's inability to discipline itself spiritually, and eventually win its physical independence.

Gandhi's emergence into the nationalist politics of his time radicalised both the critique of modern technology at the heart of this discourse, as well as the terms of political engagement with the colonial state. While Bombay Time signified the limited scope of nationalist politics, restricted to a small elite of businessmen and

professionals who petitioned and negotiated with the state through the institutions of colonial civil society, Gandhi's campaigns of mass civil disobedience drew their strength from mass mobilisation in rural and agricultural regions of India. Embracing symbols of indigenous technology such as the handloom, and wielding them effectively as a political symbol in mass campaigns against imported textiles manufactured in mechanised looms, which flooded the Indian market, Gandhi refashioned the shattered autonomy of the traditional artisan into a language and practice of anti-colonial politics.

However, despite his public rejection of various modern technologies which enslaved the spirit and body of the Indian nation under colonial rule, Gandhi often wore a wrist watch, and he was an an avid traveller by railways and steamship. On a passage between Bombay and Durban in 1909 he penned his famous early tract *Hind Swaraj, or Indian Home Rule* in which he claimed he saw only violence in the Pax Brittanica and good in the spread of railways, the "distributing agency" of evil, through which the English had consolidated their hold on India. This never prevented him from travelling the breadth of British India and the Indian Ocean by rail and steam. Gandhi's politics of technology was more than just a simple rejection of modernity[83]. His critique of technology, and his mass politics, indicated a moral economy of resistance to technological change whose colonial and postcolonial history remains largely untold.

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8 3 Mohandas Karamchand Gandhi, *Hind Swaraj, Or, Indian Home Rule* (Ahmedabad: Navajivan Publshing House, 1939).

Recent work in the history of technologies – on machines such as telegraphs, railways, clocks and other instruments, as well as the history of relations between scientists, administrators, and businessmen – has attempted to disrupt the diffusionist narrative of modern technological change, as inventions which originated in the industrialisation of northern Europe and America came to be adopted throughout dependent colonial domains in Asia, the Middle East and Africa[84]. While an earlier generation of historians of technology arrogated to Europe the heroic-progressive role of invention and discovery, recent work on colonial and postcolonial societies has shown that there are histories of modern technology which, as postcolonial critic Dipesh Chakrabarty claims, "inhere in capital and yet interrupt and punctuate the run of capital's own logic."[85]

Earlier chapters have shown how the colonial state employed new technologies in an effort to prise open the circuits of money, time and space in the colonial city, to bring them within new regimes of control and regulation by the state and the calculations of colonial capitalism. In previous sections we have examined the Gateways (ch.1) and Networks (ch.2) through which colonial Bombay was both integrated into global technological communication and financial circuits, and the interdependency of the

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8 4 Daniel R. Headrick, *The Tentacles of Progress: Technology Transfer in the Age of Imperialism* (Oxford University Press, 1988).

8 5 Dipesh Chakrabarty, Provincializing Europe: Postcolonial Thought and Historical Difference (Princeton University Press, 2007), 64.

colonial state with Indian merchant capitalists and financiers. In Clocks (ch.3) we saw how the local business and merchant communities could, by the early 1900s, mount successful resistance to colonial state efforts to coordinate and standardise time-keeping.

The next three chapters on land, property and the built environment comprise the third part of this project. From the calculation of investment and flow of money into gateway cities and urban technological networks, to the standardisation and stabilisation of these into new regimes of clock time and wage labour, we now turn to urban space. The built environment in cities is both the outcome of ongoing struggles, as well as an arena for new practices of politics and social life. The state ensures the reproduction of the dominant spatial practices – private ownership, profitable land uses, and stable property values – through technologies such as cadastral mapping, revenue surveys, and urban planning.

4. Lands

Market Value

> The point where the willing seller meets the willing purchaser is the market price. Expert valuations give us the highest expectation of the seller on the one hand and the lowest offer of the purchaser on the other hand. Hence the difficulty of having to decide where the two will meet[86].

This and the the final two chapters examines the urban land market in colonial Bombay from the early years of the twentieth century until the "boom and bust" in property which peaked during World War I and crashed in 1921-22. This steady growth paralleled the "Haussmanisation" of the city by the BIT in the wake of the plague epidemic which ravaged colonial ports and spread across India and the Empire from 1896 until the early 1900s.

The Bombay Improvement Trust (BIT) was established in 1898 in response to the global plague epidemic which originated in India and spread rapidly to other British and colonial port cities throughout Asia and America from 1896 until around 1902,

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8 6 N.M. Macleod, Reference no.51 of 1905, Cases 7 & 14, Scheme IV, Sir Dinshaw Maneckji Petit, 2nd Baronet, Mr Bomanji Dinshaw Petit, Mr Maneckji Cawasji Petit, Executors of the Late Sir Dinshaw Petit (1907).

prompting closure of ports throughout India and the British Empire[87]. The epidemic was finally brought under control through medical research and police and military interventions in the lives of the poor which brought the colonial state into its most direct contact it had ever had with its urban populations, previously kept at safe distance. The building regime instituted by the Improvement Trust in the early twentieth century can be seen – like the standardisation of clock time and the demarcation and registration of landed properties – as an attempt to stabilise and bring fixity to colonial society, in this instance through the urban built environment. The etiology of the plague – only later discovered to be spread by rats – provided the logic of the BIT's mandate, to "improve" and develop the spaces of the city to increase the circulation of "light and air" through construction of broad new streets and avenues, construction of sanitary housing and demolition of "slums", and land acquisition and spatial planning to control direct the future of urban growth in rapidly industrializing colonial Bombay.

The BMC was constituted in 1888 a decade before the plague epidemic and the creation of the BIT, and with origins in earlier official efforts to promote collaboration and enfranchisement of Indian business and propertied elites in cities by the imperial government in 1883 in Lord Ripon's minute on local self-government. The history of municipal power in colonial Bombay from 1870-1930 is thus largely the story of landlords and merchants, though there are no scholarly studies of the Municipality in

8 7 Myron Echenberg, *Plague Ports: the Global Urban Impact of Bubonic Plague,1894-1901* (New York: New York University Press, 2007).

this period and no non-official histories. The Trust had, since its creation by the Bombay Government in 1898, existed in tension with the Municipal Corporation, which though also headed by an Englishman, was dominated by elite Indians, property owners and rate payers. Landed property was, in colonial Bombay and in the constitution of the BMC, the qualification for enfranchisement and representation. However the general absence of any scholarship on the history of municipal governance in colonial cities makes it difficult to gauge, beyond the broadest outlines, the relationship between municipal power and urban property-holding. Bombay was, pre-eminently, a city of landlords, by its very constitution, until reforms in 1922 introduced rent-paying criteria for voting or holding municipal office. Until then only "rate-payers" were qualified to sit in the Corporation, and thus its most vociferous debates centered around taxation and assessment of the landed elite .

This chapter seeks to argue that, rather than simply reflecting the prevailing rates or "market value" of landed property and holdings in colonial Bombay, the colonial state participated in the creation of a capitalist market for urban land in the first two decades of the twentieth century. The roughly two decades from the establishment of the Bombay Improvement Trust (BIT) until the end of World War I, 1899 to 1919, saw the emergence of a new market for urban land in colonial Bombay operating on a scale hitherto unprecedented in the city, forging new new social and market relations around land as private property. However the experience of the

Improvement Trust and its agencies for acquiring and valuing land also showed the limits of its power to shape and harness the emerging land market, in which it remained the largest single actor.

Though the colonial state was the dominant landlord in the Island, its efforts to stabilise this as a "market" faced two major challenges – establishing title and ownership to land, and determining its "market value" when transferred or sold. The colonial state acted on the classical liberal presumption of a pre-existing "market" for land in the city as a both an alienable commodity and one subject to absolute ownership. As with circuits for money and time – or capital and labour – colonial power treated land as a "fictional commodity" through which a market society operated in colonial Bombay[88] – seeking both to assign a value calculated via rents, utility and capitalization, as well as precise boundaries and proprietary relations to facilitate its alienation and exchange.

Tribunal of Appeal

Under the constitution of the BIT, its programme of notifying and declaring "schemes" for urban improvement or street construction, a Special Collector was charged with arbitrating and awarding payments for land compulsorily acquired. At the outset of a scheme being notified, its extents and boundaries were surveyed and

8 8 Karl Polanyi, *The Great Transformation: The Political and Economic Origins of Our Time*, 2nd Beacon Paperback ed (Boston, MA: Beacon Press, 2001).

mapped, and existing plots and buildings turned into "cases" for settlement by the Special Collector. Cases heard before the Collector which remained disputed or unresolved were subject to reference to the Tribunal of Appeal, a judicial body comprised of three members, usually a judge, an engineer, and an architect.

The BIT worked under the 1894 imperial Land Acquisition Act (LAA), which granted the Trust wide-ranging powers of compulsory acquisition or "eminent domain" in its schemes of improvement and development. The Tribunal was explicitly tasked, in the words of C.P.R. Young, its President in 1900-1910 with "determining the market value of land acquired under the City of Bombay Improvement Trust Act", and providing a fair valuation and just compensation for "compulsory acquisition". In this process, the Tribunal relied on a common law jurisprudence from English land acquisition and compensation case law, now sought to be applied to Indian conditions. Though the Tribunal was officially tasked with calculating the "market value" of urban lands, it existed within several contradictions: The Tribunal was attempting to arbitrate lands values while simultaneously the Trust was undertaking massive operations which were transforming the entire nature of urban land transactions. The Trust was both trying to fix market values while being the largest single operator in the urban land market.

The Trust annexed previously agrarian and mixed land uses and valued them based on the productivity of their soil, usufructuary rights, centrality to commerce, and value of existing buildings, rather than their potentially multiplied value when they

became part of the city. The Tribunal operated under the legal fiction that "market values" can be determined objectively, though it soon would admit that the numerous appeals to its awards that "the matter in dispute is one where absolute precision or mathematical accuracy is not attainable"[89]. The Special Collector working on behalf of the Improvement Trust at first worked without established precedents or means of measurement for property and land valuation, and by 1902 a second Special Collector was appointed to stem the tide of litigation that property-owners threatened the Trust. The Tribunal's work began from 1903 onwards as appeals to the awards of the Trust's Special Collector began coming in from hundreds of small landlords, tenants, and owners of everything from cattle stables to theatres whose lands had been notified for acquisition by the Trust.

Disputes over acquisition and compensation were heard and judged by this Tribunal, which could also be appealed to the Bombay High Court, and all the way up to the Privy Council. The first decade of the Trust's operations between 1899 and 1909 saw slow and painful progress in turning the patchwork of "cases" into ordered and numbered "plots" in the notified schemes. The litigiousness of landlords, especially prominent merchants and business clans such as Karsondas Natha, Jalbhoy Ardeshir Seth, and Jerbai Wadia, as well as prominent temples, dargahs and mosques lying in the path of the Trust's acquisition plans, often forced modifications or withdrawal

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8 9 J. Batchelor, Trustees For The Improvement of the City of Bombay vs Karsondas Nathu, (1908) 10 BOMLR 688 Bombay Law Reporter (Bombay High Court 1908). Appeal no.157 of 1906 from original decree in Case no.58. Scheme 3, Karsondas Nathu.

from earlier scheme declarations. In this agonistic process of valuation and appeal, the Special Collector, Tribunal of Appeal, and eventually the High Court would articulate a methodology for calculating the "market value" of lands acquired and compensated by the Trust, whether by the methods of annual returns on property, neighbouring values and recent sales, or what became known as "hypothetical plotting", where the abstract fiction of land as a freely alienable commodity found its full expression after a long legal battle between the Trust and Bombay's biggest land-owners.

Sandhurst Road

The Sandhurst Road Scheme 3 of the Trust was, along with Princess Street Scheme 2, a major cross-town avenue planned by the Trust for both admitting "light and air" to the dense and crowded inner-city as well as increasing circulation within the city. Notified upon the creation of the BIT in December 1898 – and only thrown open to traffic in 1910 – the plan of the scheme and alignment of the road was only finalised in 1902 and land declared for acquisition.

Sandhurst Road – christened in 1910 after the former Governor of Bombay, Lord Sandhurst, in whose Council the BIT was constituted in 1898 – cut a broad swathe through the mixed commercial and residential districts of the old Native Town north of the Fort populated by merchant, labour and religious communities. the centre of

prosperous merchant trades, charitable and religious community groups, as well as a growing working class employed in local workshops, factories, and the nearby textile mills, port and railways. Sandhurst Road was 80 feet wide and connected the easternmost docks of the Port Trust at Elphinstone Bridge with the western foreshore at Back Bay and the beach at Chowpatty.

Today the avenue is lined with decrepit but stately Edwardian buildings presenting an almost continuous façade along both sides of the road, a bustling mix of residences, schools and hostels, cinema halls, banks and offices, with distinct eastern and western ends with their respective class, caste and religious divisions, a broadly Hindu-Muslim continuum that starts from the wealthy west and proceeds eastwards to what remains today a congested and ghettoised inner-city[90]. Sandhurst Road (West), as one half of Scheme III became known, stretched from the junction with the BBCI railway bridge at Chowpatty – near the old Native Town in Girgaum and elite European and Indian bungalows in Gamdevi and up Malabar Hill – cross-town through mixed residential-commercial enclaves of Marathi Brahmin and Gujarati and Marwari merchant communities.

Sandhurst Road (East) – with a parallel numbering scheme to its western counterpart – began at the junction with Falkland Road, an area known as Golpitha. From this junction eastwards, the avenue entered the working-class Pathan and Muslim

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9 0 Sandhurst Road re-named Sardar Vallabhai Patel Road (S.V.P. Marg) on 4 October 1951, see B.M.C. Correspondence no. 799 of the same date.

neighbourhood of Khetwadi, and wound towards Muslim-dominated Dongri and the eastern edge of the Island in the Port. From its western to eastern end, the avenue literally traversed from the elite colonial and Indian city through the Hindu petty bourgeois centres of trade and small manufacturing to the commodity markets and casual labour markets of the docks.

Handed over by the Trust to the Municipality in stages, Sandhurst Road was fully opened to traffic in 1910, though most of the plots on the new estate remained unbuilt for the following decade and into the collapse of Bombay's real estate market in the early twenties. The estate included not only the area of the cross-town avenue but also surrounding frontages and nearby localities north and south of the road which the Trust acquired for laying out new building sites in plots. Between when the western and eastern wings of the street scheme were declared in 1901 and 1902 and proceedings and negotiations for land acquisition and road construction over the subsequent decade, the Trust found few takers for their building sites.

Nowroji Hill

Another Tribunal legal precedent on valuation illuminates the litigiousness of land-owners in the early years of the Trust's land acquisition operations. Jalbhoy Ardeshir Seth was a wealthy fazendar (land-owner) from a prominent Parsi priestly family who owned a large estate on Nowroji Hill, to the south-east of Sandhurst

Road. The hill had been named for Jalbhoy's grandfather Maneckji Nowroji, who had purchased it on settling in Bombay in the late eighteenth century. The hill was known in the late 19th century as a stone quarry from which the Seths sold "the best blue basalt obtainable in Bombay"[91].

Nowroji was the son of the Parsi trader Rustom Maneckji, a broker and agent for the East India Company in the 17th century in their trade with the upcountry Mughal and Maratha powers in western India. Rustam "was unanimously regarded as the greatest benefactor" of the city of Surat, where he owned a large suburban estate. Nowroji and his descendants settled in Bombay in the following century, establishing the Bombay Parsi Panchayat, and building one of the first agiaries (fire temples) for the Parsi community in the Bazargate district in the walled Fort of Bombay in 1733.

Jalbhoy was the wealthy and well-travelled heir of his clan, whose agiary in the Fort he completely rebuilt at his own expense in 1891[92]. He had also written a genealogy and family history of his clan (known both as "Seth" for the title given to them by the British, and later as "Sethna") in Surat and Bombay. Jalbhoy Seth's hereditary estate stood near the peak of Nowroji Hill, on the eastern end of the Sandhurst Road estate of the Trust, between the avenue and its junction with Elphinstone Bridge, which

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9 1 Dosabhai Framji Karaka, *History of the Parsis: Including Their Manners, Customs, Religion, and Present Position* (London: Macmillan And Co Ltd London, 1884)., pp.14-17.

9 2 "Enter the Manekji Sett Agiary", *Parsi Times*, 28 April 2012, http://www.parsi-times.com (Accessed 20 July 2013)

crossed the Great Indian Peninsular (GIP) railway lines and yards towards the Prince's Docks of the Port Trust.

Nowroji Hill itself was a large stone escarpment that sloped up west from where Sandhurst Road began, and then dropped sharply on its eastern edge which faced the railway bridge. The eastern face of the hill was an outcrop that formed a large quarry which had been cut down over the years. Within a decade the entire hill would be levelled with the adjacent and contiguous Sandhurst Road, and in 1906-1907 entirely annexed by the Trust into a new residential scheme no.29, Nowroji Hill.

As proprietor of the quarry and, he claimed, and of the road running north to south along the scarp of Nowroji Hill on its eastern edge, Jalbhoy could perhaps sense his opportunity as far back as 1898 when the avenue alignment was declared, when the Bombay Improvement Trust was set-up in the wake of the plague epidemic. In 1902 when he received notice of compulsory acquisition of his fazendari properties, which except for one parcel where he kept a house of his own, the rest had been let out to various tenants on leases of differing terms.

While none of these lessees contested the Collector's awards for their separate parcels, Jalbhoy as landlord referred every one of the nine cases to the Tribunal in 1905 and 1907[93]. We do not know the total area of the nine parcels, though in 1903 the Special Collector for the Trust awarded Rs 11,803 for three of the plots, which on

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9 3 MCGM Estates Department, Tribunal of Appeal Reference no.61 of 1905, Reference Nos. 18, 19, 20, 22, 24 and 25 of 1907.

appeal to the Tribunal was increased to Rs 42,634 with interest at six percent on Rs 30,560.

At the time of declaration of the scheme in 1898 and its final notification in 1902, of the nine parcels of land, Jalbhoy was in "unencumbered ownership" of only one. Jalbhoy's strategy was to claim the entire commercial value of the land consolidated as a single stone quarry, and not as individual plots for lease or rental. The Special Collector for the Trust had in 1903 assessed each of the nine parcels individually and made separate awards on a rental basis at twenty five years purchase, and "refused Jalbhoy's claim to receive compensation on a quarrying basis". "The land is such that the whole plot, consisting of the nine parcels, forms in itself a valuable quarry, but it is not profitable to quarry any small area such as a single parcel"[94].

By the time the references came up for hearing at the Tribunal two years later, Jalbhoy had negotiated with and bought out his remaining tenants who lived at the edge of what was known as "Nowroji Hill Second Road". "The highest point of the hill was situated on that part of the hill east of Navroji [sic] Hill second road which part has... since been quarried away"[95]. The road, which stood between the quarry and the nine parcels, Jalbhoy claimed, was also his private property, using this to ground his claim for compensation on a quarrying and not a rental basis. The

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9 4 J. Batchelor, The Trustees For The Improvement of the City of Bombay vs Jalbhoy Ardesir Sett, 3 Ind Cas 757 Bombay Law Reporter (1909).

9 5 J. Batchelor, Jalbhoy Ardesir Sett vs Secretary Of State For India, (1908) 10 BOMLR 931 Bombay Law Reporter (Bombay High Court 1908).

ownership of Nowroji Hill Second Road formed the crux of Jalbhoy's claim as "there is no physical difficulty in continuing quarrying operations from the East to such point westwards on the falling hill as may mark the limit of profitable quarrying". However if the road was a public highway and not Jalbhoy's private property, "the claimant's only resource is to recommence quarrying on the western foot of the hill, and that admittedly is a far more expensive undertaking"[96].

After buying out his tenants and the declaration of another Trust scheme on the rest of his hereditary estate on Nowroji Hill in 1907, Jalbhoy engaged Bombay's senior-most English advocate, J.B. Inverarity, to appeal the Tribunal award in the High Court in 1908, and make his case for valuation as a commercial quarry. As his nine parcels were being entertained as separate claims, he appealed the Tribunal's decision on a single plot (Case 502, Scheme 3) closest to Nowroji Hill Second Road and the hillside quarry.

The Trust and Tribunal had held that the road was "public", and witnesses for Government testified to the open character of the road, which was also indicated in earlier surveys by Dickinson in 1825 and Laughton in 1872. The Trust counsel argued that "it is not a pathway over a desolate hill, but is a defined roadway running between lines of houses in a populous quarter" and communicated between two other public thoroughfares. Jalbhoy claimed that only his tenants living on the hill used the road, but an eighty-year old lifetime resident, Krishna Raghu cited that

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96 Ibid.

hawkers, vegetable and fruit sellers had been accessing and using the road freely for the past thirty to forty years. A Marwari shroff (money-lender), Ramachandra Coopaji [sic] stated to enumerators posted by the Trust before the litigation in 1907 that "no one has ever stopped me from using that road. I have never seen any one stopped." The court stated a "complete absence of evidence to suggest any precarious user, any user by sufferance or toleration" on Nowroji Hill Second Road whom Jalbhoy distinguished from other residents. The judge cited an English ruling on a private passage lighted by a public authority which was thereby presumed to have been dedicated as a public right of way, even though Nowroji Hill Second Road was unlit by the Municipality[97].

Despite these rights of way, Inverarity invoked a recent English ruling on the Stonehenge historical monument to dispute the acquisition of an easement or public right of way (jus spatiendi) by long-time users of a private path, without evidence of expenditure by a pubic authority[98]. However on cross-examination by the Government pleader in his appeal to the High Court, Jalbhoy was forced to admit the public's right of way, stating "I have not stopped any one going along Nowroji Hill second road, nor attempted to stop any one. I don't know that my predecessors ever did. I can't say one way or the other whether the public have used the road or not. The public may have used it". The court termed this an "under-statement", based on evidence of correspondence between Jalbhoy and the Municipality on arrangements

9 7 *Rex v. Lloyd* (1808) 1 Camp. 260.

9 8 *Attorney-General v. Antrobus* [1905] 2 Ch. 188.

for the deposit and collection of refuse and rubbish in Nowroji Hill in 1899-1900 where plans of local streets were exchanged.

On 25 October 1899 Jalbhoy's Solicitor noted that Nowroji Hill Second Road was a "street within the meaning of that word as defined in the [Municipal] Act and the public has had a free and uninterrupted right over the same for more than twenty years". Upon being sent a plan by the Commissioner in March 1900 to confirm whether the "streets" were correctly shown in the plan, in April Jalbhoy returned the plan with having "scored off those portions of the streets or roads on Navroji Hill [sic] which he claims as his private property", thereby contradicting his Solicitor's admission that the street was public. Jalbhoy's protests that he often levied fees and erected barriers for using the road for festivals and other purposes, or that he had quarried away the eastern half of the road notwithstanding,

> The withdrawal has every appearance of being an after-thought, and, as the Municipal Commissioner noted, is referable to no principle, unless it be the principle of reserving to the claimant as much land westwards as then appeared likely to be capable of profitable quarrying; for the division is made arbitrarily, and single roads are classed as the claimant's property up to a point and public property beyond that point[99].

With this clinching evidence on the "public" nature of Nowroji Hill Second Road – which was fatal to Jalbhoy's claim of quarrying from the east – his petition was dismissed by the High Court in July 1908, though it only applied to one of the nine parcels notified for acquisition by the Trust. When the Tribunal heard his claims for

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9 9 Ibid.

the nine parcels before this judgement, in 1905 and 1907, he had "applied that they should be consolidated and that his claim for compensation on a quarrying basis should be allowed". The Tribunal had allowed the consolidation, and increased its award four-fold to reflect a single consolidated plot, and allowing for a royalty for the potential quarrying value of the rock in Nowroji Hill, "the number of brass of rock which a crowbar can win in a day", which was fixed at Rs 300 per month for two brass per day. In light of this 1908 decision against the quarry claim, the Trust appealed this increased award of the Tribunal in 1907 to the High Court, "contending that the Tribunal has applied wrong principles in assessing the compensation and that an excessive sum has consequently been allowed"[100].

This fresh High Court case filed by the Trust against Jalbhoy – who maintained his quarrying claim even after his suit was dismissed – turned not upon the public or private character of a "street" but "upon the meaning of the words the market value of the land" in the 1894 Land Acquisition Act, under which the proceedings of the Special Collector and the Tribunal were legally constituted. The Trust counsel, Mr Lowndes, urged a valuation based on the nine separate interests in the consolidated parcels, not "as unencumbered freehold". The Court replied that "for the purposes of ascertaining the market value of land under Section 23 of the Land Acquisition Act the Court must proceed upon the assumption that it is the particular piece of land in question that has to be valued including all interests in it". The market value was

100 J. Batchelor, The Trustees For The Improvement of the City of Bombay vs Jalbhoy Ardesir Sett, 3 Ind Cas 757 Bombay Law Reporter (1909).

firstly based on the physical object, and only secondarily the bundle of rights it signified. "It must be remembered that Jalbhai as Fazendar owner of some of the plots and as lessor of the others with the prior right of buying out the lessee had an interest in the whole area acquired"[101].

Judge Batchelor cited the "decisive" ruling in a recent case in Belgaum where the meaning of "land" as both a physical object and as a bundle of interests was disputed by Government against a watandar and his mortgagees and lessees. The judge cited the Land Acquisition Act which stated that "the expression 'land' includes benefits to arise out of land, and things attached to the earth or permanently fastened to anything attached to the earth"[102]. Batchelor disagreed with the Trust's valuation of individual interests as "land is always used to denote the physical object, which is after all the thing to be acquired. Provision is made for compensation to all persons interested", but these claims could not precede the determination of the market value of the physical object at the time of the notification of the Trust's scheme.

> Reading the Act as a whole, I can come to no other conclusion that it contemplates the award of compensation in this way: first you ascertain the market value of the land on the footing that all separate interests combine to sell; and then you apportion or distribute that sum among the various persons found to be interested[103].

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1 0 1 op.cit.

1 0 2 L. Jenkins, Collector Of Belgaum vs Bhimrao V. Patel, (1908) 10 BOMLR 657 Bombay Law Reporter (Bombay High Court 1908).

1 0 3 J. Batchelor, The Trustees For The Improvement of the City of Bombay vs Jalbhoy Ardesir Sett, 3 Ind Cas 757 Bombay Law Reporter (1909).

Judge Batchelor chided Lowndes for the Trust when he warned the court that this theory of land value "would lead to unwelcome results in its practical application" that "this method may prove downright impracticable or unfair, but it will be time to consider such a case when it actually arises". The High Court nonetheless demurred on Jalbhoy's claim for compensation on a quarrying basis for the consolidated plot, because the theory of *all interests combining* would be

> ...so as to give a complete title to the assumed purchaser and acquiring body, not so as to impress upon the land a character which it did not bear, or to give to it a value which it never had in the market; for it is still the market value of the land which had to be determined; and by that is meant, I think [sic], the price which would be obtainable in the market for that concrete parcel of land with its particular advantages and particular drawbacks, both advantages and drawbacks being estimated rather with reference to commercial value than with reference to any abstract legal right.[104]

The reference to the "concrete parcel of land" versus "any abstract legal right" – parcelling together the existing claims and rights into the physical object with commodity value in the market at the time of acquisition – cancelled any possibility that he could claim the quarry value in 1898, when Sandhurst Road was declared, or even in 1902 when the alignment was notified and acquisition commenced. The court therefore refused to allow Jalbhoy's claim for the full quarriable value of the consolidated parcels, as it "was never a marketable quarry at the material time, and did not become so till after the Collector had made his award", by which time

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104 op.cit.

Jalbhoy had bought out the remaining tenants and staked his claim in the Tribunal as the superior holder. Though the land had "adaptability value" as per English legal precedents for reservoirs[105], "he himself put it out of his power to use the land as a quarry and he did so with his eyes open and for what he regarded as a sufficient consideration. I do not think he has any fair grievance if when the land comes to be acquired, it is acquired in the character in which alone he had the power of using it". The court provided a special allowance for the land's adaptability for the quarry by increasing the number of year's purchase of the rental value from fourteen to eighteen years.

Round Temple

> I need not dilate on the urgent necessity in the interest of our work of removing temples, where necessary, otherwise than by force. In laying out schemes I exclude every religious edifice that I can. But in the case of Hindoo temples it is not possible to exclude all, for they are sprinkled over the City like pepper out of a castor. And if our schemes are not to suffer, we must treat each case liberally[106].

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105 The Mayor and Corporation of Tynemouth v. The Duke of Northumberland Sir George Trevelyan and Mr Orde (1903), in *The Estates Gazette Digest of Land and Property Cases* (Estate Gazette, Limited, 1904), 527–528.

106 Proceedings of the Trustees for the Improvement of the City of Bombay, Special Meeting, 15 January 1907, T.R. 11, p.8

Amongst the properties slated for acquisition in the path of Sandhurst Road – at its central junction between the Muslim-majority inner-city and the well-to-do Hindu merchant areas westward – was a Hindu temple of the Vir Shiv Lingayat community. Lingayats are a Shaivite sect from North Kanara with a small following in the city, for which this was their sole dedicated Shiva temple with a ling (phallic stone) its central object of worship. This Shiv temple stood directly in the path of the proposed east-west cross-town scheme.

Led by their guru, the *punch* (council of five) temple trustees[107] from the time of the scheme declaration pleaded with the Trust's Special Collector, Jehangir Dossabhoy Framji, that the temple could not be moved from its current site as the ling it contained was *swayambhu* or "self-formed" – a naturally occurring stone formation in the shape of a lingam found at that site and consecrated, and around which the temple had been constructed.

The Trust's offer of settlement under what became known as Case 182 was rejected. The award made on 6 August 1904 of Rs 5,575-12-0 for the 145 square yards on which the temple stood, as well as further sums for "the removal and re-instatement of the idols and for the performance of the ceremonies"[108] at a dedicated site nearby

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1 0 7 "That the said temple was managed by the *punch* of Sakaram Ganoba, Vithoba Ganoba, Laximan [sic] Dhondiba, Mahadu Bapu and Bapu Hari", in BIT Proceedings, Special Meeting of 21 February 1905, Report of the Land Acquistion Committee No.II dated 7 February 1905, T.R. 36, p.53

1 0 8 Proceedings of the Board of Trustees for the Improvement of the City of Bombay, Special Meeting, Trustees Resolution 52, 14 February 1906, p.52

on the avenue as compensation payable under Section 23(1) of the Land Acquisition Act "for expenses attendant on a change of residence or place of business"[109].

This offer was rejected by the temple head, "Shri Guru Maharaj Parbu Ling Swami Guru Gangadhar Swami of Bombay" (hereafter Guru) and the *punch*, allegedly at the behest of the caste members of the Lingayat community. By February 1905, the property was acquired through the Special Collector, "all attempts at amicable arrangement having failed". The matter then came before the Tribunal of Appeal, where the temple trustees refused to accept the compensation deposited by the Improvement Trust. They instead approached a pleader at the High Court, Frank Oliveira, who obtained power of attorney through the Presidency Magistrate to serve notice on the Trust on behalf of the entire Lingayat community. This soon became a typical rhetorical strategy employed by numerous small Hindu and Muslim sects whose shrines and grounds came in the way of the Trust's land acquisitions. The Lingayats, through Oliveira, protested that since they solely worshipped Shiva and this was their community's only dedicated shrine in Bombay, "their religion and the Hindu Shastras do not allow them to remove this to a new place, as it being 'Shiv's' temple could not be consecrated again"[110].

The pleader recited the record of the "benign British Government in not disturbing and hurting the religious feelings of the people" and also cited that "the Trust not to

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109 BIT Proceedings, Special Meeting of 21 February 1905, Report of the Land Acquistion Committee No.II dated 7 February 1905, T.R. 36, pp.52-55

110 Ibid., p.53

disturb the Mahomedan feelings have diverged the present Scheme III at various places and made often alternations therein" as the eastern alignment of the avenue has skirted the boundaries of Khoja mosques and cemetery on the nearby Dongri Hill.

The Trust called on the services of Stephen Meredyth Edwardes (MENTIONED ABOVE) to deal with the sensitive matter of the idol and its immovability. Edwardes was an Indian Civil Service officer whose official career rose him through the ranks of the Bombay Government from the Revenue Department to the City Police and later a short stint as Municipal Commissioner. In 1905 he was soon to assume his post as Special Collector under the Land Acquisition Act for the Improvement Trust.

Edwardes asserted in his report to the Trust in January 1905 that of *Svayambhu* or self-formed *lings* in India there were only twelve in known sanctified places such as Ujjain. But "the Bhandari Street Ling cannot lay the faintest legal claim to being Svayambhu, and the temple cannot have existed in its present place for more than 90 or 100 years, if as long; for there cannot have been any appreciable number of Lingayats in Bombay till after 1815".

This "ordinary lingam" was like those found in villages where "one or more of these is renovated and appropriated whenever the Lingayats see fit to erect a new temple somewhere" such as in the Konkan and Bijapur where Edwardes furnished accounts from local revenue officials ("kulkarnis") of the portability of these idols. Taking up the offer of the petitioners to consult the Hindu *Shastras*, Edwardes cited the

scriptural authority of "the chief *sacred* books of the Lingayat cult", the Basava and Channa Basava Purana to prove "there is nothing in the Shastras which prevents a temple being *re-consecrated*".

> Further, the general principle of the Lingayat faith is that the temple itself is *nothing, without* the ling which is the stone house of the Deity and *without* the Jangam (the priest) who is the human abode of the Deity. The really important person is the Jangam, for in him Shiv is, so to speak, incarnate, and in him therefore he is possessed of greater divinity than in the stone image. I cannot therefore see what objection there can be to erecting a new temple on another site, provided that the Jangam goes there also, which he naturally would.

Though Edwardes advised the Trust that "you can remove the temple in question with a conscience perfectly at ease in regard to the 'religious' side of the matter", the Guru Jangam – the actual priest in whom the deity was personified, as per Edwardes' testimony – and the Jangam's followers stepped up their resistance to acquisition. By November 1905, eleven prominent Lingayats signed on to a petition with the *punch*, forwarded now through the well-known legal firm of Muslim solicitors, Mirza and Mirza, "to request the Board to be so good as to take into consideration the religious feelings and susceptibilities of the Virshiv Lingayat Caste of which caste our clients are the leaders and to reconsider the matter of the acquisition and cancel [...] the proceedings."

The Trust Board stood firm and replied that "the demolition of the temple is an absolute necessity" and re-iterated its earlier offer via Mirza and Mirza to the

community for "an equal area of land in the immediate neighbourhood for the purpose of re-emplacing their temple thereon on payment of only Rs 1,772 out of the Rs 5,472 which their clients have received as compensation (and which is now lodged with the Tribunal)99.

The temple remained open to the public throughout this time, though the land beneath it was in legal possession of the Trust, as Mirza and Mirza requested in early 1906 "to allow the temple to stand as it is" and direct the Trust engineer to not "take any steps to take possession of the temple". The Trust Engineer nonetheless went ahead, though the temple managers declined to accept the compensation and close the temple. With Sandhurst Road already under construction for three years, the Trust Engineer and Land Manager sought to split the temple trustees.

The Guru and one of his managers relented and made an undertaking to remove and reconsecrate the temple, with the Trust bringing an ejectment suit in the Small Causes Court, following which the Trust "admitted them as tenants for the purposes of worship on payment of a nominal rent". When the other temple managers came to learn of this deal, they again refused to shift the idol, and the Trust sought Police advice and obtained the ejectment order "against one of the parties" though it remains unclear whom. "The others, however, are not tenants but trespassers, and a suit in the High Court will be necessary in order to eject them"[111].

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1 1 1 BIT Proceedings, Special Meeting of 15 January 1907, pp.8-9

The Trust hoped to avoid this "delay and expense" and used the Commissioner of Police, H.G. Gell to bring pressure on the temple managers, now divided into "tenants" and "trespassers" on Trust land. The Board agreed that Gell was "in the best position to arrange with these people the sum to be paid for removal, as he can exercise a little pressure to prevent extortion".

Some of the temple trustees apparently now agreed to move their gods to a new site, provided there was no cost to themselves. The Trust Engineer agreed with the Police Commissioner that "the only just course is to adopt the principle of re-instatement, together with a liberal allowance for ceremonial expenses... I consider it especially important that we should adhere to this principle now when we are practically at the commencement of our work"[112]. The Chairman agreed on this policy in cases of "removal of a religious edifice for a public purpose" as it "may smooth our path for the future most materially". "It is no doubt expensive, but it would be much more expensive to excite religious animosity and cause widespread discontent"101.

While a new site was sanctioned at the end of cross lane of Bhandari Street in 1907, for the following two years as the path of Sandhurst Road was constructed around the site, the temple did not move to the new site[113]. By this time Edwardes had assumed office of Special Collector for the Trust and remained unable to persuade the temple trustees to shift and re-consecrate their *Swayambhu ling*. By early 1908, as

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1 1 2 op.cit.

1 1 3 Plot 91, Scheme 3, Sandhurst Road (East) was offered for the re-instatement of the temple, and the acquired site known as Case 182 became Plot 90, Scheme 3.

Sandhurst Road neared completion, the Trust was forced to recognise the facts on the ground and compromise. The temple would hopefully be re-instated at the new site,

> with the exception of the portion of the Temple which contains the sacred Ling. This will be left *in situ* in the centre of the road which is to be widened so as to allow ample space on either side. The Shrine will be surrounded by a raised stone foot-path and will form an interesting feature in the Scheme[114].

By November 1908 the temple and Trust Board signed an agreement in which responsibility and costs for pulling down parts of the existing temple in the way of the road and enclosing the remainder with a plinth and railings – as well as crowning the temple dome with a finial – were with the temple, now styled as a Gol Deval or "Round Temple" at the redesigned road junction. However even by June 1909 the temple authorities had failed to honour their agreement, delaying the opening of the nearly completed Sandhurst Road. Despite the intervention of the Municipality's nominee on the Trust Board, Sir Bhalchandra Krishna, with the temple authorities to persuade them to fulfil their obligations, the work was finally completed by Trust engineers and architects on their own[115]. Sandhurst Road was thrown open to traffic in 1910.

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1 1 4 *BIT Annual Administration Report for the year ending 31 March 1907*, pp.iv-v

1 1 5 BIT Proceedings, T.R. 77, 16 April 1909.

Hypothetical Plotting

Karsondas Natha came from the prosperous Gujarati Bhatia community, and was the nephew of the merchant Keshavji Jadhavji who migrated from his native Kutch to establish a trading business with Egypt in the 1870s and 1880s[116]. Jadhavji died in 1886 leaving substantial landed property to the north of the city limits in the Native Town to be used by his heirs for charitable, educational and religious purposes within the Bhatia community, in which they remain well-known for their patronage of schools and hospitals in central Bombay[117].

By the turn of the century, the income and rents from their vast estate began to increase in value as the city grew northwards, and especially with the notification of the Trust's Scheme for Sandhurst Road in 1899 and its final declaration in 1901. In less then five years since the Trust was formed, Karsondas' case contesting the valuation of his lands before the Tribunal of Appeal in 1904 – which the Trust appealed to the High Court and lost in 1908 – became a turning point in the budding law and science of land market valuation.

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116 Vallabhdas Karsondas Natha vs Commissioner Of Income-Tax, Bombay, 1947 15 ITR 32 Bom (Bombay High Court 1946).

117 Shri Bhatia Balrakshak Vidyalaya, http://bhatiaboardingmumbai.org/downloads_arch-founders.htm (consulted 25 April 2013). The hagiography of Karsondas Natha on this page claims that he and his uncle owned "108 buildings in Mumbai". While perhaps a reasonable estimate of their properties, this number may be inaccurate as 108 is also an auspicious number in Hindu numerology.

The estate of Keshavji Jadhavi and Parmanandas Jivandas was held in trust by Karsondas Natha and his cousin Mulji Purshottamji, and sprawled over 16,278 square yards at the junction of the old Charni and Khetwadi Main Roads. The portion of the estate which fell in the Sandhurst Road scheme comprised 5,576 square yards of land with a bungalow with a frontage on the old Charni Road, roughly centre between the eastern and western portions of the Trust's proposed avenue. It appears that apart from the bungalow the land was used for "agricultural purposes". The Trust's Special Collector for acquisition had awarded Natha a total of Rs 65,511-2-0 (2,200 square yards of "front land" at Rs 16 per square yard and 3,376 back land at Rs 8 per square yard), which the Tribunal judged was both too low and flawed in its method of valuation of simply assigning values to the front and back of the lands.

On Natha's appeal to the Tribunal, he was awarded a total compensation of Rs 89,068, based on exhibits of evidence given by his engineer Raghunath, who contended that the valuation should be for the land as hypothetical plots to assess the final compensation, and divided the land into eight plots with different values based on their location. Though the Tribunal "admitted that we should value the land as laid out for building purposes, as valuation on the present rent obtained for the bungalow would not be adequate", it disagreed with Raghunath's estimate of Rs 40 per square yard for a frontage depth of up to 150 feet from Charni Road. On cross-examination Raghunath could only cite a prevailing value of Rs 30 in a more commercial part of the locality in Girgaum "but that road was of a different character

carrying far more traffic and leading into the heart of the native town, to Charni Road" and would have been utilised for shops and godowns (warehousing), whereas Natha's land was more suited to residential property.

Based on a sale in 1902 of the corner plot at Khetwadi Main Road by one Mr Dadyseth for Rs 24, the Tribunal decided on Rs 25 per square yard for a frontage of 100 feet depth. For the remaining back lands which Raghunath claimed Rs 17-20, the Tribunal admitted Rs 10-12. It also allowed for an additional claim for damages at Rs 10 per square yard for about 130 square yards which, if used for building and not agriculture, would have insufficient depth for construction "due to the irregular line of acquisition"[118].

The Trust protested the excess compensation awarded by the Tribunal of Rs 23,360 in an appeal to the Bombay High Court on the grounds that "the Tribunal ought to have valued the land under Reference as a whole and not in separate plots" and that "the Tribunal erred in stating that it was admitted that the said land ought to be valued as laid out for building purposes". The Trust claimed that "there was no sufficient evidence of a demand for such separate plots" and that the Tribunal "failed to take into consideration the large area of vacant land existing in the immediate vicinity at the date of Declaration". In any case, the Trust claimed, "the Tribunal erred in comparing the said land with plots of land in different areas and positions

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118 N.M. Macleod, Reference no.68 of 1905, Case 58, Scheme III, Karsondas Natha and Mulji Purushottam, Trustees under the Declaration of Trust, November 1890 (Tribunal of Appeal 1906).

and differently circumstanced" and that evidence of nearby sales of land "afforded no guide to the value of the... lands under Reference"

While the Trust stood by its original claim of wholesale valuation of Natha's land, it further contended that if the claimant or Tribunal "were justified in valuing the said land as if sold in separate plots to separate purchasers" – the fictional layout put forth by Raghunath to the Tribunal entirely for the purpose of hypothetical land valuation – "they ought to have made proper allowances for the costs and risks of such developments"[119]. In its appeal to reduce the enhanced award, the Trust claimed the Tribunal failed to assess any allowance for this fictional plan which "involves or pre-supposes the the intermediation of a third person whom you may call the speculator or exploiter, that is to say, a person who purchases this land wholesale from the claimant in order afterwards to sell it retail for building purposes"[120].

Justice Batchelor of the appellate bench of the High Court noted that the entire argument of the Trust in its appeal rested on this somewhat minor point of a third party speculator or middle-man. However, a ruling on legality of valuing land through hypothetical plotting rather than wholesale methods would have enormous consequences for the Trust's land acquisition strategy in its early years. Indeed the

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1 1 9 Bombay High Court Memorandum of Appeall no.? Of 1906, Trustees for the Improvement of the City of Bombay v/s Karsondas Natha and ors., 13 October 1906 in MSA General Department vol.50, 1910

1 2 0 J. Batchelor, Trustees For The Improvement of the City of Bombay vs Karsondas Nathu, (1908) 10 BOMLR 688 Bombay Law Reporter (Bombay High Court 1908).

High Court was cautious in disturbing the Tribunal's award. "One of these considerations is that the matter in dispute is one where absolute precision or mathematical accuracy is not attainable; and the other consideration is that the Tribunal of Appeal has acquired long and valuable experience in these matters of valuation".

Nonetheless the High Court dismissed (with costs) the Trust's appeal questioning the Tribunal's method of valuation by hypothetical plotting and neighbouring values, stating "the value of the land to the owner is what must be regarded, and that is the price which it will fetch if disposed of on the most profitable terms... And the owner, it seems to us, is not to be deprived of the most advantageous way of selling his land by reason of the fact that it is subject to immediate acquisition". Even if the claimant took recourse to a speculator for developing the land to its maximum value, they could not be "debited with these expenses unless the introduction of the speculator is a commercial necessity. And for our own part we can see no necessary reason why the claimant should be driven to have recourse to the speculator for a business which he could do for himself"[121].

On the Trust's appeal that large stretches of vacant agrarian lands and lack of demand for building plots near Natha's estate obviated the method of valuation by neighbouring sales, the High Court similarly demurred "no evidence of former sales can be obtained which shall be precisely parallel in all its circumstances to the sale of

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1 2 1 Ibid.

this land in reference. Differences small or great exist in various conditions, and what precise allowance should be made for these differences is not a matter which can be reduced to any hard and fast law". That the valuation methods of neighbouring sales and speculative plotting arrived at nearly the same result, "it follows not only that that result is entitled to so much the greater degree of confidence, but also that the method of hypothetical development is itself corroborated"[122].

This position was upheld in further rulings of the Tribunal against the Trust's method of valuing lands "in the rough" for awarding compensation – that is, without reference to its value when hypothetically plotted, or without reference to neighbouring sales to ascertain market value.

The Trust considered an appeal to the Privy Council in London against the Bombay High Court's dismissal of its appeal against Karsondas Natha, but "were advised not to file such an appeal"[123]. The Trust was finally forced to pay for the land at Rs 15-11 per square yard for Karsondas Natha's estate. The remaining two thirds of the estate, which was both much larger and had a better frontage on Charni Road, was settled out of court by the Trust at a much higher rate of Rs 20 per square yard, as it had to be valued at the rate on August 1908 when the High Court appeal was dismissed, not in September 1902 when the Sandhurst Road scheme was declared[124].

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1 2 2 Ibid.

1 2 3 *BIT Annual Administration Report for the year ending 31st March 1909,* Appendix L, p.72

1 2 4 *BIT Annual Administration Report for the year ending 31st March 1910,* p.65

The hypothetical plotting method was again upheld by the Tribunal against the Trust's wholesale award for a similar plot of land near the estate of Karsondas Natha in Charni Road, which had been purchased by Nowroji Nusserwanji Wadia in 1905 from the estate of Sir Dinshaw Petit. N.N. Wadia expired in 1907, leaving his wife Bai Jerbai Wadia to fight the case after the Trust's Mathew Road street scheme – between the Queen's Road and the western end of Sandhurst Road – was declared in 1906. This extension to the Queen's Road cut through the Wadia's prime plot of 18,544 square yards north of Girgaum, the heart of the old Native Town.

The Trust valued the land at Rs 2,47,237 based on the purchase of the land by the Wadias in August 1905 – five months prior to the notification of the scheme – for Rs 2,41,115. The Wadia's engineer claimed compensation of Rs 6,79,974. The Special Collector awarded 4,01,175. The Tribunal, citing the Natha case as well as the judgements in other cases noted that by April 1909 "the method of valuing land by dividing it into plots has been invariably followed by the Tribunal, and upheld by the High Court", rejecting the purchase price or wholesale valuation as guides to market value in land. The Tribunal instead proposed a scheme of twenty hypothetical plots and a 40 foot wide road running through them – the area of the road subtracted from the total area of the plots to be valued individually based on recent sales in the neighbourhood.

> We assume that the land to be valued in this fully developed and ready for building purposes and for sale on the date of Declaration. This is no doubt a legal fiction. But such a theory has to be presumed where, according to decided cases, we have to assess the market value of the land, not as it actually exists on the day of Declaration, but laid out in the most lucrative and advantageous way that the owners could devise for purposes of sale[125].

The Tribunal proceedings in the Bai Jerbai case went through days of examining evidence and cross-examining witnesses on recent land transactions in Girgaum and Queen's Road and the merits of each plot in terms of frontage, dimensions and proximity to roads and tramway lines. The market rate in the busy commercial Girgaum Road was as high as Rs 40 per square yard in August 1899 – even in the immediate aftermath of the plague epidemic in Bombay. "During the seven years that followed there was considerable activity in the sale and purchase of land in the locality, a steady rise in prices up to 1903, followed by a brisk rise between 1904 and 1906" when Trust schemes for Sandhurst Road, Princess Street and Mathew Road were declared[126]. The lowest sale recorded in the area was in February 1906 of 558 square yards at Rs 30 per square yard to one Mr Darasha Dubash. "But Mr Dubash swore he got the land cheap as there was a big Peepul tree standing on the land

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1 2 5 R.M. Patell, Reference no.27 of 1908, Case nos.22, 22A, 23A, 24 & 25, Scheme no XXVII, Bai Jerbai Wadia, the Bombay United Spinning and Weaving Company Limited, Haji Moosa Haji Hassan, Framji Nasserwanji Tabelawala, Bai Kesarbai Welinkar (Tribunal of Appeal 1909).

1 2 6 Ibid., p.6

which no Hindu would cut and turn the land into a building site."[127] In less than three years the land was nonetheless worth double its price.

After gross valuation of the twenty hypothetical collects, the Bai Jerbai case was finally settled in 1909 for Rs 3,98,929, after writing back two years for the amount of time the hypothetical plotting scheme would take to sell in the market, as well as deducting the area of the proposed road. The Collector's award was upheld in terms of the rough amount estimated, but the method of land valuation henceforth followed by the Trust for acquisition was permanently altered, and made contingent on neighbouring land values and hypothetical or "speculative" schemes by landowners claiming maximum compensation.

Bombay's Land Market, 1899-1909

Land is one of the enduring themes of South Asian agrarian history. Land is, in traditional agrarian contexts, valued by its fertility or productivity, not its absolute area or location. In South Asia, land was also traditionally never the subject of absolute ownership, but the intersection of various customary rights and uses, with communities and not necessarily individuals. The assessment and collection of land revenue was the foundation of the early colonial state under the East India Company, which was granted the dewani of Bengal in the mid-eighteenth century in the first

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127 op.cit.

major concession of British sovereignty on the subcontinent during the nominal rule of a declining Mughal Empire in Delhi. Early British administrators and civil servants painfully decoded the complex customary rules and obligations, forms of accounting and systems of collection to institute a new "rule of property" in rural land in the Permanent Settlement in Bengal and similar revenue surveys and settlements in Madras and Bombay Presidencies.

With the coming of colonial rule, the notion of absolute ownership of physical land replaced the reciprocal rights and interests around which taxation of agrarian surplus had been practised for centuries. Overlapping interests converged on a single piece of land, establishing multiple claims from hereditary to religious obligations to various levels of alienation through tenancies and mortgages. The legal character of "land" remained a shifting target of colonial revenue and land law into the early twentieth century, both as a "bundle of rights" and as a physical object of private property, and these codifications often contained significant urban exceptions, as Bombay City was left out of the purview of policies and laws governing the land administration of the districts and cities in the rest of the Bombay Presidency.

As will be seen in the next chapter, the shifting meanings of "land" as a tangible object and commodity with demarcated boundaries, a clear chain of title and rights to absolute ownership presented obstacles to the colonial state's project to become hegemonic in the emerging market for urban land in Bombay, and facilitate

acquisition and transfer of land to agencies like the Improvement Trust and Port Trust.

This chapter has focussed on the land acquisition and compensation activities of the Trust, and the cases it fought in its Tribunal of Appeal and the High Court, which drove up the costs of land by ensnaring the Trust in a contradiction where it both sought to both determine the "market value" of land while itself being the largest actor in the emerging land market established by the Trust's large-scale operations in the decade after the plague. S.M. Edwardes, writing in his *Gazetteer* in 1909, noted a "great boom in land values" between October 1904 and 1907, which at its height "prices were equal to those obtained during the share mania". Edwardes – who himself had been Special Collector for the Trust in 1905-1906 – attributed the boom to the revival of population, trade and industry and the "spread of sanitary knowledge" after the worst years of the plague epidemic, as well as the the large-scale investments in and absorption of centrally-located urban lands in new estates of the Port Trust and Improvement Trust – especially the latter's investment of around Rs 17,500,000 in four years between 1900 and 1904 in land acquisition for its first housing and street schemes[128].

The initial impact of the plague epidemic between 1896 and 1899 led to both high mortality rates within the city, as well as a large-scale out-migration of the urban

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1 2 8 Stephen Meredyth Edwardes and Campbell, James M, *The Gazetteer of Bombay City and Island*, vol. I (Bombay: Times of India Press, 1909), 327–328.

population to their native villages and regions. It took three to four years from the turn of the century for the city's social and business life resumed and population increased steadily, and with it land values and housing rents in the city recovered and grew. Edwardes' *Gazetteer* provides a good snapshot of city-wide land values in 1907-1908, almost a decade after the establishment of the Improvement Trust, which by then had thirty-three housing and street schemes in various stages of development throughout the Island City. Rates had fallen around 20% from their peak in 1907, and recorded sales in various areas of the city show the uneven surface of urban land values.

While rates in the elite European residential areas of Queen's Road, Walkeshwar, and Cuffe Parade in the west and south of the Island ranged from Rs 40 to Rs 60 per square yard, and in the denser Indian merchant neighbourhoods of Girgaum, Charni Road and Grant Road from Rs 25 to Rs 50 per square yard, the highest sales recorded were in the "congested areas" in the inner-city where the Trust's operations were concentrated. Rates in Sandhurst Road East went as high as Rs 150, in nearby Sheikh Memon Street Rs 350, and the Trust's newly opened Princess Street estate recorded the highest sale at Rs 420 per square yard in 1907-8. This is compared with Rs 300 per square yard in Esplanade Road, the heart of the European commercial district in the Fort area.

As rates sky-rocketed on the Trust's two most prime estates in the inner-city, where the surface of land values was stretched to new-found limits, most of the plots which

it had cleared or temporarily rented pending agreements for building on long leases remained unsold. On completing its first decade of operations in 1908-1909 the Trust reported "no great advance" in development of their estates, as "most of the large area of 5 1/2 lakh [550,000] square yards acquired during the year was still undeveloped at the close of the year"[129]. In the following year, out of a total of around two hundred plots on the full Sandhurst Road estate, the Trust noted a small improvement as:

> 11 plots measuring 7,139 square yards of the value of Rs 4,40,571 were leased. There are, however, still a very large number of plots unleased in Scheme III, and the Trust lose heavily in Interest and Sinking Fund charges on the capital sunk in them, as most of them yield very little in the shape of even temporary revenue. In the whole city the Trust still have 415 plots aggregating 4,18,900 square yards available for leasing, but not yet leased; the annual rental of these is estimated at about Rs 6,26,000[130].

The following year, 1911, saw only eight plots auctioned for building purposes, and still more than half of the Trust's plots given out on monthly rentals pending auction and leasing to buyers. The following year saw "great progress" as 36 plots were leased in the estate. But the hiatus between lands acquired and leased by the Trust remained large, as in 1912 a total of 553 plots measuring 638,980 square yards leased. These were valued at Rs 243-95 lakhs, and returned an annual revenue from leasehold rents of around Rs 10 lakhs, while there remained 317 unleased but

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129 *BIT Annual Administration Report for the year ending 31st March 1909*, p.10

130 *BIT Annual Administration Report for the year ending 31st March 1910*, pp.11-12

acquired plots of around 337,000 square yards, on which annual revenues were diminished due to the short leases on which they were granted to temporary used, pending disposal at auction[131].

In the wake of the Karsondas Natha and Bai Jerbai cases between 1906 and 1909, the capital costs of land acquisition had spiralled throughout the Island, especially at the fringes of the expanding city where Trust operations were transforming both the physical geography of the land through filling, levelling and reclamation works, as well as the market for land and buildings where it was acquiring larger contiguous chunks for streets and suburban developments on a scale not possible in the crowded inner-city.

> There is an annually increasing area of open land, chiefly in the North of the Island, which has never been used for building purposes, but for which the Trust have had to pay compensation based on the value of the land as potential building land. On such land the Trust must lose heavily until building estates are developed on it, and this work is being pushed on as fast as possible[132].

The litigiousness of the land acquisition process and the delays and policy shifts it entailed caused both drove up the costs of land for the Trust schemes and significantly delayed their progress.

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131 *BIT Annual Administration Report for the year ending 31st March 1912*, pp.16-17

132 *BIT Annual Administration Report for the year ending 31st March 1911*, p.14

By contrast with these litigious cases and setbacks, the Trust's plans for laying out expansive estates free of encumbrances were easier pursued through land in-fills and reclamations, which it pursued in the north of the Island and on the coast. New lands obtained from raising and filling in the swamps and flats – despite the large investment of capital and engineering works involved – served up a cleaner surface for laying out new schemes without the burdens of outright acquisition from existing owners. Of the six initial schemes notified by the Trust in December 1898, only the first wholesale demolition and reconstruction of the congested and plague-stricken inner-city area of Nagpada was under way within a year, by January 1900. The remaining four schemes were delayed by acquisition and legal proceedings which the Trust fought out over years while land values steadily climbed. Princess Street was declared in January 1901, Sandhurst Road declared in 1902, and large suburban Gamdevi, Dadar-Matunga and Sion-Matunga estates took up to 1906 before declaration.

5. Maps

> Such difficulties as heavy traffic and argumentative householders and much internal measurement and sloping grounds must be allowed for by slight reductions, and contrary conditions by slight enhancements[133].
>
> F.G. Hartnell-Anderson, City Survey Manual, 1915

Cadastral Surveying

This chapter seeks to examine and understand the process of surveying and settlement of urban lands through the work of the pre-plague surveys of the Island City, and the first Cadastral Survey conducted during WWI via the Bombay City Survey Act, when the "city survey" was developed as a technology for colonial administrators to resolve property disputes, register and monitor land ownership, and plan and direct urban space. Surveying and registration was a simultaneously topographical and juridical technology – the settlement involved a topographical map and a property register. Much like standardisation of clock time, the valuation and enumeration of urban lands was subject to challenge and resistance by powerful landed interests in the colonial city.

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1 3 3 F.G. Hartnell Anderson, *City Survey Manual*, Second Edition (Nagpur: Government Press, 1971), 57.

Disputes over land use and tenancy continued as the city expanded rapidly northwards with the development of new docks, mills, roads and railways to support the burgeoning cotton trade and textile industry from the 1850s. The reclamation and developments of late 19th and early 20th century Bombay were instrumental in consolidating colonial state sovereignty over the emerging market in urban lands.

The rapid rise in the value of urban lands and its value as commodity to be sold, transferred or alienation as credit or conversion to money through loans and mortgages is the backdrop against which the problems of market value and land ownership[134]. The wide-scale demolition and improvement operations of the BIT across the Island saw landlords and proprietors clamour to value their lands as dear as possible, posing challenges to the science and law of land valuation which were arbitrated in the courts. As other large utilities such as the Port Trust and Bombay Electric Supply and Tramways (BEST) – as well as the textile mills, railway workshops and cotton and bulk goods godowns – required large estates in centrally located urban locations for constructing infrastructure, "compulsory acquisition" and "eminent domain" strategies required states to assert their market dominance and legal hegemony in urban land markets formed in the wake of industrial expansion. With the post-plague recovery in land and property values from 1904 onwards in Bombay City, the demand for juridical, legal and cartographic mechanisms to

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1 3 4 Richard M. (Richard Melancthon) Hurd, *Principles of City Land Values* (New York: Record and Guide, 1911), http://archive.org/details/principlesofcity00hurd.

facilitate the alienation, exchange and transfer of valuable urban lands became difficult to ignore.

In the 19th century, scientific geography, triangulation and map-making emerged as a "technological fix" for the territorial and revenue administration of the vast swathes of Britain's subcontinential Indian Empire. By the turn of the century the practices of surveying, scientific cartography and longitudinal determination had been systematized into a new metropolitan science of geography, largely through the extensive mapping of colonial empires which British and French scientists, officials, and military officers undertook through the 19th century. Matthew Edney's study of imperial surveys, maps and cartography as a "geographic panopticon" through which the British "constructed" their knowledge and rule over India in *Mapping An Empire* is the best-known study of colonial map-making as a form of colonial knowledge and surveillance. Focussing on the imperial scale of British India, and how surveying techniques and triangulation offered a fix to the impossibility of depicting territory at the true scale of 1:1. Edney documents the development of scientific geography, triangulation and map-making as a fix for the "cartographic anarchy" of British India – how scientific techniques of geodetic projection and scale were devised as mathematical transformations of the Earth's curvature into the representational demands of the map's two-dimensional surface.

Maps both center the territory of an expanding city in its regional hinterland and anchor its growth in recognizable signifiers. The vast changes in the ecology and built environment of the Island engineered by the Trust, as well as the state's continually frustrated attempts to fix ownership and rights in land in the city through compulsory registration and further legal measures, led to the demand for a central mapping office and registry for urban lands.

Maps both declare and annex space to the sovereign gaze of the public while simultaneously centering their object in a depiction of territory. They are, in this sense, a direct and graphic reification of state authority. Maps portray uneven geographies as smooth surfaces and gather together diverse associations of people, places and things in space that is simultaneously abstract and concrete – subject to what Henri Lefebvre called the "double illusion" of space, their *opacity* and *transparency* which combine to both fetishise and reify the object of representation in the map. Maps thus literally *produce* the scales of action which they depict, making possible the linkage and association of populations, places, and things across distances[135].

The effective map is one which achieves plausibility and recognition over time and space – one which functions as an actor by successfully enrolling the observer in its network. The map that successfully centers itself over time and space and gives

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1 3 5 Henri Lefebvre, *The Urban Revolution* (Minneapolis: University of Minnesota Press, 2003).

stability and fixity to the spatial formation it depicts – the map which keeps the object signified in the center, and conceals the process of signification in the geometries of points and lines and the symbology of colours and patterns which give meaning and direction to the spatial practices signified by cartographic illustration.

The first attempts to map Bombay by colonial surveyors were completed in the period both before and after the East India Company's rule was subsumed by the Crown in the mid-19th century and show the outlines of the original archipelago of seven islands which the British had acquired from the Portuguese in the 17th century, as well as their composition into the contemporary Island City. These were the first maps that gave a stable form to what became known as the city of Bombay, which emerged from the reclamations of the 1840s. The maps here show the geological formations of islands and harbour in clear relief. Through drainage of the mud flats, siltation of embankments, and projects of land reclamation which the East India Company undertook through the 1840s, we can discern the outlines the core city which we still recognize today.

Historian Mariam Dossal's recent book *Theatre of Conflict, City of Hope: Mumbai, 1660 to Present Times* focuses on "the ways in which the politics of land use have impacted on the lives and living conditions of Bombay's inhabitants" (xxiii) with "contested space as its central concern". It is, to date, the only book-length study of land and property in Bombay/Mumbai, seeking to explain how "expensive private property dominates almost every aspect of life" (xix). It is within this "theatre of

conflict" over land and property relations that Dossal's spatial history of Bombay's historical transition from "feudalism to capitalism".

The pre-capitalist land regime of the islands which eventually comprised Bombay City is explained in the origins of Crown rule in the earlier archipelago owned by the Portuguese and given as dowry in the royal marriage treaty of Infanta Catherine of Braganza to King Charles the Second on 25 June 1661. Dossal's chronicles the British acquisition of Bombay from the Portuguese, and early efforts by British governors to protect and fortify their settlement, and extend their legal sovereignty over the city and its inhabitants. In the new courts instituted by the British in the 18th century, a modern form of legal hegemony over land transactions was sought through instituting a "rule of property" by which the colonial state would supersede earlier Indian and Portuguese tenures, neutralize the power of landlords and tenants, and establish Government as the ultimate "lords of the land". Dossal foregrounds the difficulties faced by the British in extending this rule in early colonial Bombay. The obstacles to rationalizing earlier tenures and creating a market for land based on private property, was a "painful reminder of their limited and contested domain" (xxx). For the British, asserting control over territory required tackling the "maze of tenures and titles" (11) left behind by earlier empires through "scientific surveying" which would clarify land ownership and uses, and thereby rationalize the basis of revenue collection.

The Portuguese forms of agricultural land tenure such as *fazendari*, *toka* and *foras*, as well as older *inams,* customary and usufruct rights in land vested by erstwhile dynastic rulers formed a mosaic of feudal inheritances and obligations. It required significant political and administrative effort to remove this burden of precedent and establish a new legal and economic basis for land administration in British Bombay. The settlement of urban lands in colonial Bombay was by no means smooth or easy. Eliciting land use, rental and taxation data from revenue surveys, and cadastral maps to register properties and transactions, was frustrated on the ground by numerous practical problems in determining the "ground truth" of land uses. Payments earlier made in kind or customary dues were replaced by cash payments, but centralizing revenue collection in the state required breaking the back of the hereditary revenue farmers appointed by the Portuguese, the *vereadores* and *mattaras* (54).

The lack of a comprehensive revenue survey to measure and demarcate boundaries was repeatedly felt throughout the 18th century as lands held by the Company were alienated, encroached and "invaded" by Indians. Classifying uses and tenures, monitoring exchange and mortgage of land and property, and collecting taxes proved frustrating without reference to a comprehensive survey which recorded all transactions and laws to codify the state's monopoly over all private property.

Resumption of land under such agricultural tenures such as *toka* and *foras* and increases in ground rent, reclamation from the sea of new landed estates which were parcelled and leased out, and acquisition of land for "public purposes" such as

railway construction and infrastructure proceeded apace through the mid-nineteenth century, despite protests by cultivators, established tenants, and "litigious and cantankerous individuals" (130). Numerous petitions cited by Dossal protest at the incursion by the state on "customary" rights and obligations in land, as the "rule of custom" became a common rhetorical strategy by Indians to resist the "rule of property". All of these episodes uncovered by Dossal's archival work point to a vibrant subaltern resistance to the legal violence of the colonial state in the creation of a capitalist land market.

Dossal briefly documents the three major cadastral (property or revenue) surveys of Bombay conducted by the British under Thomas Dickinson (1811-1827), George Laughton (1865-1872) and W.J. Newland (1915-1918), which for her serve as "illuminating prisms which reveal the transformation of feudal lands into private property, the growing dominance of a capitalist land market, and greater state intervention" (xxxii). Dickinson's "scientific" mapping of Bombay's lands, topography and properties had an avowed political objective – to "assert the State's rights to all lands in Bombay" (79, 97) and recover lost rents and rights, and establish titles by conversion of multiple tenures into freehold or "fee simple" private property. Completed over sixteen years, and containing registers, cadastral maps, rent rolls and reports on localities, Dickinson's survey created the first accurate "base map" of British Bombay, permanently altering the the terms of tenancy and occupation in the city after 1827. Dickinson's work was supplemented by the extensive study completed

in 1814 by F. Warden on "the policy by which the administration has been governed in the assignment of lands, as an encouragement to merchants and others to establish themselves in Bombay".

These early surveys and maps were selective in their depiction of features and territory, and were based on earlier travellers' accounts and indigenous sources. They arose from the needs of mapping the areas around the Fort in the south of the Island – the seat of colonial power and command center for shipping and military operations in the natural harbour of Bombay to the east. The first revenue survey of the island archipelago which comprised Bombay's lands had to wait until the consolidation of British power in western India following the Anglo-Maratha Wars. Dickinson took over the work of the revenue survey in 1811 after the failure of earlier efforts due to rioting by Bhandaris against increases in the toddy tax (*abkaree*) – which was second only to land revenue in its returns for the Bombay Government (Dossal, 73).

In conjunction with the Great Indian Trigonometrical Survey, a second survey of the city under G.A. Laughton was undertaken from 1865-1872, producing an updated set of maps and a new land register which more accurately demarcated the boundaries of plots, helping defend against rampant encroachments and constantly changing "facts on the ground" (134). New laws were passed in 1865 for assessment of rates to be paid by landowners, as well as the terms of leases issued on newly developed

areas in the rapidly industrializing city. Laughton's report of 1872 stated clearly that "owners of properties could not be compelled to show their boundaries or even the locality of the land they laid claim to," as the Revenue Survey Act of 1865 enacted by the Bombay Government did not apply to the Island City of Bombay. While notices of measurement were given, Laughton noted they were "treated with silent contempt, and the Surveyor had to rest satisfied with such corroborative evidence regarding the boundaries, as he could obtain from individuals working in the adjoining fields."[136]Nonetheless the Laughton Survey recorded 21,575 properties in the Island, verified against deeds and plans in the Collector's office, him noting that "there is hardly a case unless one of dispute, where the correct area has not been entered in the register".[137]

Final plans were prepared at a scale of 40 feet to an inch for the Island City south of Grant Road, and 100 feet to an inch for the northern parts of the Island. Fifty permanent bench-marks of brass and cut stone were fixed throughout the Island less than half a mile apart from each other, the area of the Island determined by Laughton's survey to be 22 miles, 105 acres and 4,149 square yards. In the subsequent thirty years to the turn of the 20th century, both the scale of growth and area of the city increased rapidly through the operations of the Port Trust and Improvement Trust in large-scale land acquisition and redevelopment, and the

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136 D.R. Vaidya, Bombay City Land Revenue Act, p.131

137 Ibid., p.232

growth of the cotton textile mills in the central parts of the Island which where the BIT's focus of street and housing construction.

The outline of the Island City is recognizable from the mid-19th century surveys of Dickinson and Wynne is immediately recognisable in early 20th century maps of the Bombay Improvement Trust and Cadastral Survey, which enhance this scale in an entirely reformulated geographic "panopticon" of grid lines and sheets. Their territorial object remained almost identical, though the Island City of Bombay, now mapped in its entirety up to the causeways and creeks which separated it from the island of Salsette to its north. However the positioning and rendering of this object was now indexed against the rest of British India which by the early twentieth century had been mapped to a one-inch scale by the Great Trigonometrical Survey and its allied surveys through the end of the 19th century.

The "Torrens System"

In property law and surveying practice in the Anglo-American and British Empire tradition, what came to be known the "Torrens system" was foundational to developing the systematic instruments for registration of land transactions and their certification by the state, both to establish title and simplify transfer and alienation of land. Its numerous proponents and commentators throughout the English-speaking colonial settlements as well as the U.S. and England, established a kindred system of

legal-juridical enactments which sought to reform property laws to simplify the alienation and commodification of land, which until then was "cumbrous and complex". The juridical system of registration and titling also faced stiff professional resistance to its simplification of cadastral registers by solicitors and land speculators in New South Wales in the late nineteenth century, particularly those profiteering from poorly surveyed interior lands. First developed in Australia and named after Sir Robert Torrens, premier of South Australia who in 1858 passed the two original statutes which went into use in all other states and colonies of Australia and New Zealand, this system of property ownership and registration was notably pioneered in British settler colonies, and was adapted from similar systems of registration in use by maritime insurance companies and registries such as Lloyd's of London who registered merchant shipping and maintained lists of rated companies.

As James Edward Hogg, English legal scholar and conveyancer who codified and wrote commentaries on the Torrens system stated, "its essential feature, as a system of conveyancing, is that transactions with land are effected by their being registered or recorded in a public office instead of being effected solely by the execution of instruments, or the occurrence of events". As Hogg noted, this system is "both foreign to the spirit and the letter of the feudal system" of land tenures, based on overlapping claims and not absolute ownership. Throughout the British Empire – with a few exceptions in the former Dutch colonies of South Africa and Ceylon and in the U.S. – feudal land tenures remained subject to the ultimate sovereignty of the Crown, and

fee-simple estates were rarely converted into absolute ownership, or what in property law is known as "allodial ownership", independent of any superior landlord, sovereign or overlord such as the Crown – which signifies a feudal land tenure. The general body of statutes and case law in the British Empire was similar enough with regard to enactments on property registration, land transfer and conveyancing that they became referred to as the "Torrens system" in various jurisdictions where it was adopted – including England, Canada and Australia. [138]

Registration of transfer of lands, Hogg argues, are in legal principles required for its passing into true ownership – obliterating the old feudal distinction between "realty" and "personalty" as allodial ownership becomes legally the same as a personal estate. Hogg noted that this system would generally result in the erosion of the feudal tenures on which most land-holding was based throughout the British Empire, especially in India and Bombay which in principle was entirely owned by the Crown.

Before its codification and enactment by Torrens in South Australia, the first instance of any legislature in the British Empire enacting a system of compulsory registration of land transfers and transactions to ensure their legal validity between the state and parties was in the Crown Colony of Labuan in North Borneo in 1849 – The Labuan Ordinance in sections 5 and 9 quoted by Hogg state "every transfer of land and every mutation of title to land by succession, shall be entered in a register..." and "no

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1 3 8 James Edward Hogg, *The Australian Torrens System with Statutes* (London: William Clowes and Sons, 1905), 1–3.

instrument of transfer shall be entitled to any official recognition of its validity or received in evidence as a legal instrument in a Court of Law, unless the same shall have been registered..."[139]

In 1854 in England, a Royal Commission was appointed "to consider the subject of registration of title with reference to the sale and transfer of land" which recommended registration of title and not just registration of assurances. The Commission's 1857 Report helped to frame the England Land Registry Act 1862, and laid the basis for similar registries in Australia and New Zealand and recommended "the quieting of all questions on title from the date of the first registration; the substitution of a uniform and short form of conveyance for all transfers of the legal estate, and the accompanying of the same with a plan of the land affected"[140]. Sir Robert Torrens landmark Real Property Act was passed in the legislature of South Australia in 1858, and this "Torrens system" quickly came to replace the land registries which were established in the 1860s based on the English commissions and acts.

Hogg noted the successful adoption of the Australian system and the rejection of the "feudal rules which underlay property law" and "adherence to the forms and principles of English land law and conveyancing, [which] failed to remedy the evils incidental to the existence of the equitable estate". "Were feudal tenure technically,

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139 Hogg, p.17, footnote 67

140 Quoted in Hogg, p.20

as it has been practically, replaced by allodial ownership, the Torrens system of conveyance by registration would require but little alteration to transform it into a consistent system logically resting on intelligible principles."[141]

Indeed Torrens himself seemed to announce in his 1858 Real Property Act ("An Act to simplify the Laws relating to the transfer and encumbrance of Freehold and other interests in Land") his intent to simplify and revolutionise the process of title registration in land by sweeping away feudal English laws of landed property and conveyancing and abrogating prior contracts for the sale of land, treating them as transfers.[142] "The intention of the framers of the State was literally to revolutionise the whole law of real property, so far as it concerned land under the new system. This intention, however, was not carried out, chiefly because it would have been almost impossible for judicial tribunals to place any construction on the enactment which would make it at once intelligible and consistent with itself".[143]

This, Hogg notes, was due to "lack of technical legal knowledge" in juridical application in Australia and other colonies, though he noted that in England the higher professional calibre of lawyers and solicitors also created imperfections through preserving useless legal formalities which the Torrens system sought to simplify or abolish in its quest for an allodial, modern system of absolute ownership and registered title to landed property. Torren's Real Property Act became law in

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141 Hogg, p.22

142 Hogg, p.23

143 Hogg, p.23

South Australia and its kindred Land Registry Act in New Zealand both in 1860, followed by Lord Westbury's act which established HM Land Registry in England in 1862. Thus began the process of "bringing land under the act" by registration of "indefeasible title" to estates and interests in properties in a public register of ownership, in which all subsequent transfers are entered[144].

A summary of the "system" written for an American agricultural journal in 1912 narrates the benefits and simplicity that Torrens' methodology of registration and titling offered for alienation and transfer of land. Prior to the Torrens system, when land was transferred between two parties, the purchaser had to seek advice of a lawyer/solicitor or "expert title examiner" to establish the chain of titles to the land in question, inquiring in various registers and offices to its history. Every prospective purchaser must perforce examine and re-examine the title every time an estate changed hands, which was both time-consuming and expensive – delays and costs in transfer amounting to an effective tax on land. The recurring title inquiry and examination, while lucrative practice for the solicitors in preparing and executing conveyances, had no official sanction or juridical legality, only a legal opinion subject to dispute by another lawyer on the validity of the title.

For this, the "Torrens system" offered a stamp of juridical approval by creating an official system of title examination and authentication by a central authority, which

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1 4 4 William C. Niblack, An Analysis of the Torrens System of Conveying Land, Chicago: Callaghan & Company, 1912, pp.33-34

provided for a public registration to make its legality unimpeachable, as well as issue of certificate to the owner showing the true ownership and boundaries of the land. "When the owner wishes to transfer the estate, the prospective purchaser can ascertain the condition of the title by mere examination of the certificate of registration or the owner's copy of it. Thus the recurring system of examination of a chain of titles is eliminated". New encumbrances or interests such as mortgages or loans, sub-divisions, leases or tenancies are noted in the public record. "This enables anyone to ascertain at a glance, from the books of the registrar or from the copy in the hands of the owner, the exact status of the title at any given time"[145].

This register, what in French is called a "cadastre", is the Anglo-American equivalent of the cadastral survey, which combines the tabular roll of titles and owners in the property register with a topographical survey of actual physical space in maps of properties and their boundaries, and maintains these relations as exchanges, transfers and mutations of holdings and interests in the land occur, with the system extending its hold over the land market through compulsory registration at the time of transfer. "The rule in all systems is... that when a title has once been registered it must always be registered thereafter"[146]. The legal machinery and the surveying establishment together serve to create a juridical-topographic technology where registers of properties can be located in space and assigned to people, though the need for

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145 F.B. Bomberger, "The Torrens System of Land Title Registration", Maryland State College of Agriculture Bulletin, vol.14, no.2, April 1917, pp.2-4

146 Ibid., p.5

constant maintenance and revision was foremost in the minds of its founders and adherents.

Rule of Property for Bombay

Colonial revenue administration in the provincial towns and villages of the Bombay Presidency had acted earlier to provide for "city surveys" in the mofussil or rural areas as far back as the Bombay Land Revenue Codes of 1868 and 1879 which made compulsory enumeration of tenancy and ownership patterns and land revenue rates for non-urban areas as part of wider agrarian settlements, in which "sanads" or title deeds were issued by the District Collectors in rural areas. With the passage of the 1903 Record of Rights Act, which prescribed the maintenance of both a register of all landlords, tenants, mortgagees and other interested parties, these "sanads" became legal instruments defining ownership in land. The Record of Rights Act empowered village accountants and district-level revenue officers to maintain authoritative records and surveillance of mutations in landed property, as well as an authoritative legal register of property rights:

> 4.1 Any person acquiring, by succession, survivorship, inheritance, partition, purchase, mortgage, gift, lease, or otherwise, any right as owner, holder, mortgagee, landlord or tenant of the land, or assignee of the rent or revenue thereof, in the whole or part of any survey-number or other holding in any village, in which a record of rights aforesaid is being prepared or is kept, shall report orally

or in writing his acquisition of such right to the village accountant within three months of the date of acquisition.

The Act only applied to "mofussil" or rural areas, and specifically did not extend to the Island of Bombay. Its entire establishment was self-financing and based on fees charged for the issue of "sanads" which identified ownership and rights in land. Crucially, in cities the Collector did not identify the land owner, only the person or group liable for payment of ground rent – the "superior holder", not necessarily the "land-owner". Indeed urban land ownership remained subject to more complicated chains of title and bundles of rights on which the city had been growing for the past century.

The Island City of Bombay remained outside the 1868 and 1903 Acts, with only a weaker set of amendments to the Bombay City Land Revenue Act (Parts V-VIII CHECK) in 1876 which secured legal recognition for the maps and registers prepared under Laughton's survey in 1865-1872[147]. Under this act the City Collector signed deeds signed with certified extracts of Laughton's Survey to all landowners liable to assessment of ground rent by the Collector, though these did not record the facts on the ground of leases, mortgages or tenancies, the facts on the ground of possession and ownership.

147 MSA RD no.1154, Part II, 6 May 1914, p.103

Even where the rough area of land cover was known and mapped in earlier surveys, its ownership remained unclear. As D.R. Vaidya, the engineer, surveyor and legal historian of land law in colonial Bombay stated "with all these changes and the want of an establishment to keep the survey maps up to date, the old plans of 1865-72 were found of little help to give a correct idea of the City... Government, in the year 1908, thought it was high time that a scientific re-survey of Bombay was carried out."[148]

As noted by G.W. Hatch, Collector in 1910, Laughton's register "was prepared primarily for the purpose of showing who was responsible for the payment of the Government assessment – not identifying absolute ownership or even current occupancy. Thus a *fazendari* holding measuring perhaps half an acre in the most crowded part of the city is shown in one block against the name of a *fazendar* who alone is responsible for the Government due; the holders under the *fazendar* although they are in fact the actual proprietors do not appear in the register". Nonetheless Laughton's survey set the standard for technical and juridical practices of cadastral mapping as "the stereotyped pattern for City Survey up to 1915", as noted by F.G.H. Anderson in his authoritative manual published in 1917:

> Those surveys were excellently made in so far as they presented an exact map of the existing state of things; but they were defective in the want of foresight which led to their being so made that maintenance for a long period was practically impossible.[149]

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148 Ibid., p.134

149 F.G. Hartnell Anderson, *City Survey Manual.*, p.i

Anderson, whose manual codified the fiscal, administrative and legal objectives and technical procedures for city surveys conducted throughout Bombay Presidency, noted the rapid urbanisation of the towns and cities and "the constant flow of legal changes" of which official maps and records failed to register, thus defeating the objective of surveillance. "Throughout the whole of our City Survey operations we must have an eye upon the final object and upon the requirements of Maintenance":

> The surveys should give us a starting point with dated maps, the originals of which will not be altered. Thereafter every change must be incorporated in the *printed* maps as rapidly as it occurs, and this Maintenance staff cannot be passive or sedentary, merely waiting in an office until information is brought, but it must move about and look for the changes which are not reported as well as receiving those which are reported[150].

Hatch echoed Anderson's strongly urged that the new register – part of the proposed cadastral survey, the juridical accompaniment to the topographic map – "must be a document prepared with far greater exactness and care than was Laughton's register" with a separate establishment for its preparation and central office for maintenance "if it is to be anything more than a mere record of ostensible owners and occupants of property".

Within ten years of the turn of the century – following the outbreak of the plague and creation of the Improvement Trust – the need for an entirely new survey of the city's

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150 Ibid. p.7

land holdings was felt by colonial officialdom. The last comprehensive survey completed by Laughton in 1872 and was poorly maintained since, had outgrown the city's densification and growth northwards. No re-surveys were undertaken in more than three decades by either the Collector or Municipality, and the BIT and BPT maintained their own engineering and survey branches for their estates.

Colonial revenue officials in the Bombay Government also admitted their failure to keep up with these rapid changes, and the tattered and useless state of the property maps from Laughton's Survey which only loosely recorded occupancy (not ownership) and boundaries at scale which was unsuited to the city's growth in the past thirty to forty years. Section 22 of the Indian Registration Act of 1908 made compulsory for persons registering documents and transactions affecting immoveable property to identify the property by reference to a survey number and by attaching a survey map certified by the Collector.

The large-scale land acquisition and estates development operations of the BIT, BPT, Railways and other government bodies for infrastructure and estate development revealed the chaos in the revenue and property registers in the City Collector's office, the repository of all land records and titles in the city under Laughton's survey. Top officials admitted in 1911 that "the entries therein do not in all cases afford reliable evidence as to the real state of rights in the land."[151] Revenue officials cited examples

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151 RD no.R-3354, 20.9.1911, Letter to Chief Secretary, Revenue Dept signed by G.S. Curtis, J. McNeill, G.W. Hatch, E.L. Sale, E.F. Nicholson, in MSA RD no.1154 (Part II), 1914

from the BIT's acquisition proceedings in Scheme 29, Naoroji Hill where the Special Collector divided the land to be acquired into 413 separate properties notified for individual acquisition, whereas almost all were tenants or mortgagees of around twenty persons shown in the Collector's records.

Even these twenty were beholden to a single *fazendar* or "superior holder", Jalbhoy Ardeshir Seth who launched multiple cases and appeals to the valuation of his lands at Nowroji Hill and Dongri (see previous chapter). Revenue officials cited numerous other vast discrepancies between their records and those of the Municipality and Trusts – in Parel the Collector recognised 137 holdings, while there were 201 claimants; in the crowded inner-city area of Pydhonie surveyors found 2,033 "actual holdings, while the Revenue records showed only 990". Overall, in 1911, the Collector's records showed the total number of separate holdings as 27,310, but the Municipal registers showed no less than 46,540!

G.S. Curtis, who served both as Collector of Bombay and Inspector General of Registration between 1908-1911 and a prime advocate of a new cadastral survey, noted a further dilemma in not just the titling but the very description of properties and their boundaries in legal notices, sales and transfers. Boundaries were often identified by the names of adjoining owners or proprietors, and without reference to survey numbers – which many bounded properties often intersected, thus indicating no surveyed official boundary for demarcation. Curtis suggested that "the owner

necessarily being a changeable person, it would be better to adopt survey *numbers*." Curtis claimed the public refused to adopt this practice in registration of property documents, "owing to the fact that only parts of survey numbers are generally transferred, and the absence to any benefit of the parties concerned. Now it seems to me that the Solicitors of Bombay are strangely ignorant how very inaccurate the description of properties frequently is and how likely it is that all their elaborate English conveyances will be wasted on this account"[152].

Curtis gave an example from a sale notice for Survey No. 2226-6 appearing in the Times of India on 22 September 1908 (reproduced here in full for illustration)

> First. – All that piece or parcel of toca land situate lying and being at Naigaum or Sewree within the Island of Bombay and in the Registration Sub-District of Bombay, containing by ad-measurement 1590 square yards or thereabouts and bounded on or towards the north, south, east and west by the property of Rungari and is registered in the books of the Collector of Land Revenue under New Survey No. 6–2226 and which said premises are assessed by the Collector of Municipal Rates and Taxes under Ward F, ward No. 2253 and street No. 547.

Entirely bounded on all sides by the property of one "Rungari" – an occupational caste title for traditional dyers, of which Curtis noted "there are many thousand members in Bombay". Not only was the description "bad for vagueness", it was simply wrong, as Survey No. 2226 was in Laughton's Survey shown as belonging to one Cursetji Nowroji Wadia, whom it appears over time sub-divided to various

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1 5 2 Note by G.S. Curtis, in "Accompaniments to Government Resolution, Revenue Department, no.377, 16 January 1911" in MSA RD no.xxx (Part II), 1914)

proprietors making amended survey numbers 2226-6 and 2226-7, noted in the name of Khatri Esa Jan Mohammed (whom Curtis noted "He may be a Rungari, but the prefix Khatri renders this improbable).

The guesswork of caste titles, community and family names which went into identifying a property could of course be simplified by reference to numbers and not names. But the real challenges lay in assigning ownership or title based on a revised numbering system for bounded plots of land, and this is where the juridical and legal notions of absolute ownership and the rights and claims of property grew more complicated. Sir George Curtis urged that the opportunity not be lost for not only a re-survey at larger scale of the city, but for "preparing an authoritative register of titles" as a legal-juridical corollary to the topographic mapping of a rapidly changing urban environment at the turn of the century.

Curtis led the Committee which in 1911 aimed to begin work on the topographical mapping while drafting further legislation to enable a "summary inquiry with a view to determining the name or names of the person in beneficial ownership of the land the conditions of the tenure"[153] and to establish a Central Office for the maintenance of the city survey after the initial mapping and records of landed property were established, which would take several years to complete. The Revenue Department Committee led by G.S. Curtis also prescribed the form that would be utilised in issuing cadastral survey numbers with twelve columns showing old and new survey

153 Vaidya, p.137

numbers, tenure, area, names of owners and holders, and corresponding municipal house, street and revenue roll numbers (ILLUSTRATION).

This new central registry housed in an office close to the Old Custom House and Town Hall building – the seat of the Collector and Registration Departments – was sought to centralise the fragmented and contradictory records of ground rent revenues from the Collector, house and property taxes assessed by the Municipality, and the indexes of transfers, subdivisions and assignments in the Registration Office, as well as numerous other public registers of landed property.

Newlands Survey

Bombay Government officials had requisitioned a professional officer of the Great Indian Trigonometrical Survey (GTS) via the Surveyor General, as top officers argued in 1912 with the imperial Government for a more qualified officer than could be found in the Bombay Revenue Survey. "In view of the very high value which land has now reached in Bombay and of the importance of securing absolute accuracy in the maps, the Governor in Council considers that the agency of the [GTS] should be employed exclusively on this occasion"[154] as the Government had an over-riding interest in clarifying the anarchy in revenue and municipal land records.

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154 MSA RD 1914, No.1154, Part II, 25 January 1912, Chief Secretary Bombay to Secretary, GoI RD&A, p.87

To estimate the costs of the full survey, they suggested an experimental test mapping be undertaken of a dense area of around 300 acres in the areas of Khetwadi and Girgaum. This area intersected both large private lands south of Grant Road and the BIT's Sandhurst Road Estate (Scheme 3), the broad new avenue demolished through crowded inner-city settlements which had opened to traffic only a few years earlier in 1910.

W.J. Newland's name still remains on the heading of every register in the City Survey and Land Records Office, though today in Mumbai many often misremember the Cadastral Survey as the "New Lands Survey". Newland was a chartered surveyor employed by the Great Indian Trigonometrical Survey at the turn of the century, whose career spanned the settlement of British India and other territories in Asia. He had was the chief surveyor for the land and revenue settlement of the New Territories north of Hong Kong between 1899 and 1904 at a scale of 32 inches to the mile (1/1980). This mapping was completed by Newland and his team of Indian surveyors soon after these lands were transferred on 99 years lease from the Chinese Emperor to Queen Victoria as "Crown Lands" in the Second Peking Convention[155] of 1898, which expanded British control of Hong Kong and Kowloon to the south Chinese countryside. Newland directed the topographical survey on which more than 350,000 agrarian properties were demarcated and "settled" through long leases back to the

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155 Wikipedia
http://en.wikipedia.org/wiki/Convention_for_the_Extension_of_Hong_Kong_Territory

original Chinese agrarian proprietors under a new sovereign[156]. This was on the Indian model where the Crown inherited agrarian feudal tenures and sovereignty in land[157].

He was selected by the Surveyor General for deputation to Bombay on the request of Curtis and others, to conduct the topographical survey and make an entirely new base map of the city at the scale of 20 feet to a mile for the entire Island. Newland arrived in Bombay in late 1913 and by early 1914 had completed the experimental mapping of the Khetwadi and Girgaum area, in order to estimate the costs and time required to map all the buildings and identify properties of the entire city. Initially facing difficulty in recruiting trained survey staff locally in Bombay, he was able to procure upper subordinate staff from the North Indian Amin community, though of the eight Muslim surveyors who undertook the twenty-day outdoor survey of the test area half were ill-trained in the sciences of traverses and triangulation, or were unprepared for surveying in densely populated areas like Khetwadi – Newland noted that the out-turn increased in the less congested areas near Queens Road. The Collector of Bombay, E.L. Sale, commented that "the work turned out by what must be described as 'a scratch pack' of surveyors varying much in intelligence and diligence testifies to the patient and constant supervision which has been exercised by

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156 Sayer, Geoffrey Robley. *Hong Kong 1862-1919: Years of Discretion*. Hong Kong University Press, 1985, p.92

157 Pang-Kwong, Li, *Political Order and Power Transition in Hong Kong* (Chinese University Press, 1997), pp.235-6.

the Superintendent [Newland]."[158] Major Tandy of the Survey of India explained that the Amin surveyors from U.P. were a motley mix of "specially selected old frontier surveyors or of youths whose character is still in the making".

As the test case neared completion in February 1914, Newland recommended a permanent establishment for the proposed Bombay City Survey of over a hundred surveyors, inspectors, demarcators, computers and their subordinate clerks and staff, as well as police assistance during outdoor operations. With ten traverse surveyors and forty detail surveyors, twenty draughtsmen and additional staff completing around half an acre per day, the Government estimated both the survey and register could be completed in three to four years (the survey was actually completed in March 1919). Arrangements were made for the inspection and maintenance of the traverse marks and triangulation stations in the test area by the Municipality. GTS also deputed an extra additional superintendent from Mussoorie, B.M. Berrill, and more subordinate staff to Bombay to assist Newland in the full city survey which was to commence in mid-1914[159] and "be carried through to completion" pending new legislation which British officials began drafting in May 1914.

The Survey of India in Shimla evaluated the technical quality of the test work done by Newland and his surveyors, and judged it highly, with a maximum closing error in traverse computations of 1 in 1,000, which Colonel Tandy of GTS judged a

158 MSA RD no.1154 Part I, p.123

159 MSA RD 1914, no.1154, Part I, "Report on the detail survey of the tes case area for the period commencing 10th December 2013 and ending 6 January 1914", pp.49-53

satisfactory compromise between "absolute perfection and reasonable economy" and on which he offered technical advice on better "distributing discrepancies in a network" of major/minor traverses between stations and marks to smooth out the errors of half to one foot (or an eighth to quarter inch on the plan at scale of 25 inches to a mile). Detailed dimensional measurements of houses and buildings were written on traces for annotation and correction of areas on the final survey sheets.

While giving glowing marks to Newland for his experimental area of topographical mapping, Survey of India officials tread cautiously when it came to "calling up all owners and entering all boundaries on the maps and preparing a record of rights accordingly", suggesting a special officer from Bombay Revenue Department work under Newland for this purpose as "the mere moral effect of the settlement officer's doing the work might perhaps act as a deterrent to vexatious litigation". Tandy feared that "all sorts of questions are liable to be stirred up once records of rights begin, and in Bombay many of these might involve issues of great monetary value"[160] such that Newland would be "swamped" by this work of settlement of boundaries and ownership, which required a specially trained barrister or legal expert. He urged that "the two kinds of work are so incompatible and require such different qualities of mind that it is intrinsically undesirable that a survey officer should do settlement work"[161].

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160 Ibid., Tandy Report, p.127

161 Ibid., p.128

Besides needing an officer with suitable training, the demarcation of boundaries and compilation of property registers to identify and disambiguate possession, occupation and ownership of the mapped structures awaited the framing of a new Bombay City Survey Act to legally authorise an inquiry into facts on the ground of ownership, occupancy and possession. This "settlement" of boundaries and records of possession – the "scientific re-survey" long desired by British officials in colonial Bombay to tighten control over land revenue and the emerging urban property market – required a legal framework to further refine the overlapping meanings of property holding and land ownership.

Newland's topographical survey and house measurement was finally completed in March 1919, more than five years after the first experiment had begun – and spanning the war years in Bombay. The traverse system followed was based on the main lines laid down by the GTS across India, with an additional 30,000 traverse stations laid down in the course of the survey in the Island City, which made it possible to compute "the direct distance to a decimal place of a foot between any two traverse stations on the Island", as Newland and his Deputy Collector, D.R. Vaidya, reported to Government in November 1916.

The "Newland's Survey" base map consisted of 729 sheets on a scale of 40 feet to an inch for the entire 22 square miles of the Island City. The outcome reflected a new sovereignty in their scale – the index map of the Cadastral Survey was itself divided

into more than eighty sheets covering each ward of the city – and concentric circles radiating from the colonial core, positioning the city within an intensified grid of registration and control. A new central office was opened in late 1919 in the City Collectorate in the old Custom House to accommodate a permanent establishment for the detailed survey which officials regarded as "probably the best of its kind in India" which "should be maintained with the most scrupulous care and in the most efficient manner possible" to avoid the earlier failure to keep Laughton's Survey up-to-date[162]. "Unless the maintenance and resurvey work is carried out on the same lines as that adopted for the original survey work the object of this new survey will be partially defeated as the value of the new maps will not have any lasting effect"[163].

Survey sheets were to be made available for in the newly established Bombay City Survey and Land Records Office, which was responsible for future re-surveys and upkeep of traverse frames, benchmarks and computation records from the original topographic mapping. Newland was retained as Superintendent of the office in-charge of the Survey Branch. The new office also housed a Records Branch for maintenance of maps and mutation registers to monitor and record changes in ownership, and check and verify plans for transfers of property and conveyances. The former Head Surveyor and Deputy Collector, D.R. Vaidya, was appointed as Deputy

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1 6 2 MSA RD File no.B-83, 1919-1920, "Letter no.1339, Proposal for the creation of an appointment of Survey Officer to adminster the proposed Bombay City Survey and Land Records Office", p.29

1 6 3 Ibid., p.80

Collector or "demarcation officer" with Newland as Superintendent to undertake the identification of property owners.

George Seymour Curtis, who had during these years ascended the bureaucratic ranks of the Government of Bombay and was now acting Chief Secretary, drafted the outlines of a new Act in mid 1914, as well as amendments to the Bombay Land Revenue Code. It aimed after forty years to close "the wide divergence between revenue registry and beneficial possession, which has become more and more marked as years have gone on" of which "the increasing inaccuracy has of late years been a frequent cause of trouble", especially the fazendari tenures in the fast-growing north of the Island which were a source of frustration to the Improvement Trust in its first decade of large-scale land acquisition.

As early as 1900, through an amendment to the 1876 Bombay City Land Revenue Act, the colonial state had attempted to disentangle further the bundle of rights and interests in urban land in the city. The original Act – which followed several years after Laughton's Survey in 1872, which formed its topographical basis – had eschewed the use of the term "owner" or even "occupant" in favour of "holder".

In the late nineteenth century this had signified "the person having the highest title under Government to the land in respect of which land revenue is payable"[164]. The 1900 amendment sought to widen the meaning of "superior holder" to "bring within

[164] D.R. Vaidya, Bombay City Land Revenue Act 1876 (1948), pp.154-155

its compass all land-holders whether they pay land revenue in respect of their holdings or not", including not just the "superior" or "highest holders" but those who "have a right to receive rent or assessment from another holder" in Bombay City.

This expansion of the colonial state's surveillance of the chain of titles and rights in urban land nonetheless eschewed the term "owner", as various drafts and correspondence refer to those in "beneficial possession" or "occupation" as the objects of the cadastral survey. Curtis's proposed legislation for the Bombay City Survey sought to more clearly define "owners" from "holders". He drew from the Calcutta Survey Act of 1887, which more clearly defined the reciprocal meanings of and "owner" as someone with a permanent interest in "land" and "property".

Curtis' original 1914 draft provided for for a summoning judicial inquiry under an Officer or Superintendent to arbitrate disputes over boundaries and ownership, with the same powers to "summon and enforce the attendance of witnesses and compel the production of documents" as in a civil court, with the only power of appeal on the decision to the City Collector, whose orders on boundaries and possession remained final. Failure to comply with the inquiry was subject to a hundred-rupee fine or a week of simple imprisonment[165].

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165 MSA RD no.1154, Part II, "Accompaniments to the letter to the Government of India, Department of Revenue and Agriculture, no.4242, dated 6th May 1914 – An Act to provide for a survey of the Town and Island of Bombay", pp.106-114

These draconian provisions were the juridical counterpart to the topographical map of the physical landscape already under way in Newland's city survey. Without a property inquiry and register – the cadastre recording the chain of titles and bundle of rights which the demarcated land signified – the City Survey would remain simply a snapshot of the physical landscape at the moment of survey, subject to changing facts on the ground. Newland's establishment increased and as the full survey of Bombay City began, this new surface of inscription for depicting land, buildings, streets and other features of the built environment presented a problem of simultaneously identifying and defining boundaries and ownership of private property in land in Bombay.

The problem for the colonial state was simultaneously one of assigning ownership and registering change in occupancy and use, and keeping them under constant surveillance amidst rapid changes in the urban environment. S.G. Burrard, Surveyor General of India, in his report of March 1914 to the Collector of Bombay on the city survey noted "all surveys become out of date as a country progresses, and in cities where population is dense, surveys become out of date even before they are completed". Rapid changes in both single buildings and entire streets and areas necessitated "to make the map adhere to strictly to a given date, and then to issue revised editions of that map at subsequent intervals" or postponing surveys in areas where large-scale changes were taking place "for maps are rendered obsolete by such

changes"[166]. Major Tandy noted that "in the great changes and developments of Bombay now occurring, it appears likely that many portions of the work may have to be almost immediately resurveyed, unless the Superintendent can maintain such constant touch with all improvement schemes and other alterations as may enable him to reduce the dangers of reduplication of work to a minimum"[167].

The City Survey titling inquiry into boundaries and ownership – and the compilation of property registers – lagged far behind the maps already traced and drawn during the war years. Up to 1918 and 1919 when Newland completed his maps, land and housing prices were sky-rocketing throughout the Island, and various state agencies notified large new areas for acquisition and development of new railway and port facilities, reclamations, residential and industrial estates, and sanitary and reclamation works in villages in the north of the Island soon to be swallowed into the expanding metropolis.

Indeed in the span of less than one year in 1918-1919 the Improvement Trust – already soon to be wound up – went on a massive spree of acquisition and notification of new residential, commercial and industrial schemes in the coastal villages of Worli, Dharavi, Wadala and Sewree unparalleled since the BIT was first formed at the turn of the century. Along with a new railway locomotive workshop in

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166 Ibid., p.125, 13 March 1914

167 Ibid., p.120

Matunga and other municipal schemes. It remains unclear what effect the expanding Leviathan of land acquisition had on the real estate bubble which spanned the postwar years, but there is no doubt that during the "boom years" of 1917-1920 many properties changed hands and entire areas of the northern Island were transformed by both state and private activity in the emerging "land market".

Newland's surveying continued from early 1914 for five years, spanning a period in Bombay when the market for residential and commercial property witnessed an unparalleled boom in response to wartime commercial demand for Indian commodities and manufactures for British and colonial forces, and shortages of material for new construction. The prices of land and rents on properties quadrupled in the final war and postwar years between 1916-1921, leading to what many commentators termed a local "house famine".

Indeed Newland himself complained in mid-1920 of his inability to find an affordable private apartment to rent in Bombay – let alone a bungalow more suited to his senior rank in the imperial cadre – as the flat for which he paid a monthly rent of Rs 216 since August 1915 had now more than doubled, even under the rates of the wartime Rent Act introduced in 1917. The same building had been purchased in 1915 for Rs 65,000, and five years later its owner was negotiating to sell it for Rs 3,50,000, so Newland was made a monthly tenant subject to rent hikes. He pleaded with his

superiors "to grant me a house allowance that will enable me to meet the exorbitant demands of local landlords"[168].

While Curtis, Newland and other officials aimed to complete both the survey and inquiry work of the Bombay City Survey by late 1917, the outbreak of World War I and a charged political atmosphere in colonial Bombay delayed the final passage of the City Survey Act until late 1915. The actual work took another four years, as topographical map sheets were only completed in early 1919 after the end of the war, by which time house and property prices in Bombay were at their postwar peak. The inquiries into possession and ownership and compilation and printing of registers remained only half-completed in 1921 (see next chapter) by which time the property market was tottering towards its fall.

"An Inquisition into Title"

The need for constant maintenance and reporting of changes back to the central office for the City Survey by the main state authorities – the Municipality, Improvement Trust and Port Trust – in the draft bill also sought contributions by these bodies towards the cost of the overall survey work already under way. When presented to the Indian members of the Municipal Corporation by the Municipal

168 MSA RD File no.B-83, "Letter dated 13 April 1920 from Mr W.J. Newland, Superintendent, Bombay City Survey and Land Records Office" to Government of Bombay, 2 July 1920

Commissioner Patrick Cadell in July 1914 with a request of Rs 1,08,333 to defray the costs, it was immediately referred to the Municipal Standing Committee and then a sub-committee under the chairman Chunilal V. Mehta and ten others, of whom nine were elected Indian councillors.

Cadell was requested to clarify the allocations for the survey and how costs would be respectively borne by the Municipality and recovered from private land-owners – of whom the Indian councillors were the most staunch representatives, as they were elected on a restricted franchise only open to rate payers. They also pressed Cadell to state if the "survey will be regarded as conclusive evidence in Courts of Law?"

Cadell's written reply set the terms for the debate and controversy which soon erupted between the Indian-controlled Municipality and the British-dominated Government of Bombay Revenue Department, which had already begun survey mapping and drafting of a new law with wide-ranging consequences for landed proprietors in the city. Cadell re-iterated to his Indian councillors the basic principles of the Torrens system of titled property "it is proposed to maintain a central office and to make the registration of all changes and devolutions of title compulsory. This will doubtless have the effect of making entries in the survey strong evidence in the Courts of Law and this evidence will doubtless soon, if not immediately, be treated as presumptive". In the original printed letter, Cadell continues "The record maintained

will *in fact be a Record of Rights*, and it will be the duty of all public bodies... to see that all corrections which concern them are properly made"[169]

In the archive the italicised phrase "Record of Rights" is crossed and replaced in handwriting with "become a record of Possession", though this was perhaps inserted after the uproar it caused in Bombay, where India's declaration of entry into World War I for the British Empire had just been declared. Led by an elderly Sir Pherozeshah Mehta – he would pass away within a year – the draft bill came up for a vociferous debate in both the Legislative Council[170], where it was tabled for passage, and in the Municipal Corporation, where Sir PM forced a discussion[171]. Sir PM, in his last year of life, was the senior-most Indian statesmen in Bombay by this time, having served in both bodies, often holding dual seats, and provided a channel between the imperial-provincial Government of Bombay and the semi-elected Municipality dominated by elite Indians who remained loyal to PM's Moderate politics.

PM condemned the draft City Survey bill for the "dangerous powers it would place in the hands of the Executive" through Curtis's draft which went far beyond a simple

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169 MSA RD File no.1154, Part II, "Letter from the Commissioner, No.23143, dated 12th October 1914" (italics added)

170 Vide Proceedings of Council of the Governor of Bombay, 9 December 1914, Bombay Government Gazettte dated 16 January 1915, quoted in Vaidya, p.285

171 I have unfortunately been unable to locate the original text of the proceedings in the Bombay Legislative Council and Municipal Corporation in December 1914, which form the crux of this story. The account here is reconstructed from reports of the *Times of India* and the *Bombay Chronicle*.

survey like the 1887 Calcutta Survey Act on which it was based. A cadastral survey, "postulates two things, a map and a register of ownership. What he should have said was, a map and a list of owners". The proposed bill went beyond earlier city land revenue acts which avoided any reference to ownership, PM alleged that despite official claims that "there is to be no inference as to title, no inquisition or detailed inquiry into title deeds, there is a curious insistence in adhering to a phraseology that presupposes that and nothing else". Cadell's mis-statement that the "register of possession" – the property cadastre legally authorised by the Act – "will become a record of rights" raised suspicions of what PM called "an Inquisition" of property owners by the colonial state.

"All this sinister phraseology" of records, registers, rights and possession implied a legal inquiry and procedure compelling owners and occupants to produce title deeds and defend their claims to true ownership. "That would be an unheard of and monstrous obligation. Even in a Court of Law an owner is specifically protected from the perils that attend the production of title deeds, which once exposed may lay him open to the claims of all sorts of people who would not otherwise have dreamt of emerging from obscurity"[172]. PM alleged that by adding these "four short words" which were unknown in the Calcutta bill "would enable Government to adopt a procedure which... must result in an inquisition into the private title deeds of private owners". Furthermore, this cadastral survey – unlike previous surveys – "was to be

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172 *The Bombay Chronicle*, "A Record of Rights", 15 December 1914

applied not only to those who paid land revenue to Government, but to all householders"[173].

As the Municipality had been asked by Government to contribute Rs 1,08,333 towards the costs of completing the City Survey, the Indian members demanded a discussion on "the details of an undertaking, part of the cost of which it is proposed should fall upon a public representative body, which will have to use for that purpose the money of the ratepayers"[174] in the teeth of resistance from Commissioner Cadell and G.W. Hatch, acting chairman of the Improvement Trust – who held appointed seats in the Municipality – as well as the wealthy landlord and merchant Cowasji Jehangir, who wanted to sanction the contribution without discussion in the Standing Committee.

PM noted that Cadell had struck out the phrase "record of rights" and replaced it with "record of possession" in his final letter to the Corporation – perhaps at the instance of Jehangir – but "that made no difference whatever, because a record of possession must become a record of rights ultimately. What, after all, was the meaning of the term "possession". It did not differ from "ownership", it did not mean "physical possession", and ultimately Mr Curtis was obliged to say it meant "beneficial possession". Even that was not correct; it meant the person who owned it. So ultimately it came to ownership, and they could only prove that by producing their

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173 *The Bombay Chronicle*, "Corporation and the Survey Bill", 15 December 1914

174 Ibid.

title deeds"[175]. Hatch suggested a new term to pacify PM, "ostensible ownership", which seemed to PM "confusion worse confounded". Commissioner Cadell protested that his words were being twisted, and in any case did not reflect official views, complaining that PM's account was like a wartime "German bulletin" (war had been declared less than two months before) to which PM took objection as another word for lying.

PM noted that both in England and India, as per prior precedent as well as legislation such as the Indian Evidence Act of 1872[176], "no witness shall be compelled to produce his title deeds in a court of law" unless party to a legal dispute. Even as early as 1876, in the debates prior to the new Bombay City Land Revenue Act, a section empowering the Collector to issue summons and demand documents from any person, or even "such information as may be in his possession", was omitted by the Council on the objection of the Bombay Law Society and advice of then-Advocate General, Sir Andrew Scoble, who hinted at the complicated claims and chains of title in Bombay's land regime[177]:

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175 Ibid.

176 Section 130 of the Indian Evidence Act 1872 states "No witness who is not a party to a suit shall be compelled to produce his title-deeds to any property, or any document in virtue of which he holds any property as pledgee or mortgagee, or any document the production of which might tend to criminate him, unless he has agreed in writing to produce them with the person seeking the production of such deeds or some person through whom he claims."

177 Ibid. and Vaidya, p.271

> It is well-established law in England, and also in India, that the owner of land should not be compelled to produce his title deeds except when he is a party to a suit. I cannot see why the Collector should require to look at a man's title deeds unless he wishes to establish some claim against the land; otherwise it would be merely a matter of idle curiosity. But if Government wishes to establish a claim, it ought to go to law like anyone else. I have heard it said by an eminent judge that he did not think there was a title in Bombay which would pass muster with a regular conveyancer.[178]

Sir PM was on confident grounds with these common law arguments against giving publicity to the chain of titles around land through legal inquiries which could stir up all kinds of claims against property holders[179]. The municipal reporter of the *Bombay Chronicle* noted the concern for every house-holder in the city against "people who might not otherwise dream of making a claim. A Hindu of a joint family, or a Mahomedan with his numerous laws, might come forward, and they could imagine the burden of expense that might fall upon a person who owned a single house, perhaps a widow, which was the case in many instances". While claiming no "sinister motives" on the side of colonial officialdom, PM claimed "here Government would enter into an inquisition into titles of all the properties in the city and difficulty would arise in congested parts in the native town entailing great pecuniary burden and endless litigation." He continued:

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178 Ibid., p.2

179 See also the judgement of Sir Michael Westropp in Naoroji (Nowroji) Behramji v Rogers, 1867, Bombay High Court Reports volume IV, part 1.

> Any number of titles, if examined by a Solicitor, will be found to have flaws in them and though the titles may be perfectly good still an investigation into them will lead to the exposure of flaws. Not that the parties would be turned out in consequence but they did not desire those flaws to be known to other people to raise all sorts [sic] speculative claims in a variety of ways. An ordinary individual cannot go and propound his title deed before a legal gentleman; he must go to a pleader or a Solicitor and take his advice. This will mean putting an enormous burden upon private owners.[180]

The battle over the legal definitions of "ownership", "possession" and property in Bombay was not simply semantic, for whatever the register may be called, PM asserted "in course of time this would be an important record, so much so that after thirty or forty years it would be impossible to dispute the rights of ownership". Even Curtis' original phrase "beneficial ownership" – meaning someone who enjoys the benefits of ownership without necessarily having full title – remained deeply ambiguous. Cadell and Hatch were forced to accept the majority vote in the Municipality in favour of referring the "inquisition" into private titles and the municipal contribution to the cadastral survey to a committee of the Corporation.

The final Bombay City Survey Act bill re-drafted by a Select Committee[181] of the Governor's Council in early 1915 removed all references to "owners" and "ownership", substituting "holders" to signify occupants of urban lands (the

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180 D.R. Vaidya and G.S. Gupte, eds., *The Bombay City Land Revenue Act No.II of 1876*, Third Edition (Bombay: Bombay Central Press, 1948), 297–298.

181 See Select Committee Report in Bombay Government Gazette, 24 March 1915, pp.105-108 (cited in Vaidya, op.cit).

"beneficial owners" or "possessors") but ensuring the "provisions of the bill are independent of proprietary rights"[182]Of the 23 sections in Curtis' draft bill, more than half were entirely removed or reworded in the Select Committee on notices of motion by K.R. Godbole and Sir Ibrahim Rahimtoola. The removed sections related to the powers of the Superintendent to arbitrate boundary disputes, summon witnesses, solicit evidence, as well as the procedures for appeal and final decision by the Collector and the draconian fines and prison sentence for failure to comply. "All expressions which are capable of being so construed as to suggest that the operations of the survey involve any judicial inquiry into title or were in any way determinative of rights were removed"[183].

The Indian members of the Council also inserted new clauses stating clearly that though the superintendent will prepare a map and register of all lands surveyed, "nothing contained in such map or register shall affect the rights of any person", reducing the register of possession to an uncertain status in the cadastral survey which was already under way:

> 7.2. To every piece of land separately shown on the map and entered in the register an indicative number shall be assigned, and the name of the person appearing to be the holder thereof at the time of the survey shall be entered into the register[184].

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182 Vaidya and G.S. Gupte, *The Bombay City Land Revenue Act No.II of 1876*, 286.

183 Ibid., p.290

184 Ibid., p.289

However clause 15 inserted by the Committee re-iterated PM's citation of common law that "no person... shall be compelled to produce his title deeds to any land or to disclose their contents"[185]. Vaidya, perhaps referring to his difficulties in settlement of titles, drily noted in his legal commentary on the final City Survey Act of 1915 that as a result of Section 15 on privilege of title deeds – the clause inserted by Sir PM and the Select Committee – "the officer preparing the Survey Register was to a great extent handicapped in [its] preparation and was unable to record the correct title to properties in some cases".

By early 1920, Anderson – later author of the City Survey manual, now acting Settlement Commissioner in the Bombay Revenue Department – reported on the slow progress in completing the inquiry into the holders' history and facts of occupancy of around 23,000 total properties enumerated by the topographical survey and house measurement between 1914 and 1919. By February 1920 – around the peak of the post-war property boom in Bombay City – inquiries into slightly over half, or around 12,000 properties had been completed and entered into the property registers for the nineteen cadastral divisions into which the Island City was divided.

Anderson reported that 11,000 remained surveyed but not enquired, and at the current rate of 600 cases disposed per month, completion would take another year and a half at least with his current staff. In the two years since mapping had been

185 Vaidya and G.S. Gupte, *The Bombay City Land Revenue Act No.II of 1876.*, pp.297-298

completed by Newland, only 473 property registers had been completed and printed, and more than 1,500 remained. This delayed the final numbering of plots of land, as this could only be completed in serial form only after all the enquiries for a division of the city were completed. Skeleton records with temporary numbers to record mutations and transfers were maintained in the meantime as titling work continued with an additional establishment of "examiners" to speed up the work of enquiries into holders[186].

As the City Survey Act of 1915 had severely restricted the powers of inquiry and infringement on proprietary rights of urban landowners, the investigation into holdings undertaken by Special Collector D.R. Vaidya was restricted to paper titles voluntarily elected by land holders and owners, not the "open air enquiry" typical of mofussil surveys, and the early acquisition operations of the Improvement Trust under its Special Collector with the juridical powers of magistrate. While Newland had attempted to locate land-owners at the time of his topographical survey to law down his lines along commonly accepted boundaries, he described to this to Anderson as a "sad experience", complaining that "we can only aim at accuracy, we cannot guarantee it".

In the 1915 Act Newland lamented the insertion of the proviso that the topographical map and property register must be maintained by the Collector but that "no person

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186 MSA RD File B-212, 1920, "CTS Management"

shall... be required to give notice of the acquisition of any interest in land"[187]. After the passage of this stunted version of the City Survey Act the surveyors could not compel attendance, so formal inquiries into ownership were abandoned. The examiners working to establish the chain of titles to enter into the property registers were restricted to searches of existing records and evidence in the offices of the Collector, Sub-Registrar, Municipality and Improvement and Port Trust, which progressed slowly. Newland further complained it was impossible to reconcile the a large number of Laughton's survey numbers with his new survey, or find the corresponding rent roll numbers or land tenures in the survey registers of these bodies.

Newland replied to Anderson that the Fort division in the heart of Bombay's commercial centre, with around 1,500 surveyed, demarcated and numbered plots would be the first property register ready by March 1920, with the next register for Bhuleshwar of 5,000 plots ready by mid-1920. This too remained delayed due to the slow progress in examining paper titles, and as the provincial Settlement Commissioner and city Collector began infighting over control of the new office and the delayed completion of the property registers – to the chagrin of Vaidya, who perhaps sought to stay neutral of his British superiors in the Collectorate and Revenue Department. While additional staff was deployed to speed up copying of registers, printing was abandoned in favour of keeping the registers as manuscript, as

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187 Bombay City Survey Act 1915, Section 12.1, in Vaidya, p.294

mutations between the rough register and final printing. By June 1921, more than seven years since Newland had begun his work, only five of the nineteen divisions had completed map and property registers, all of these located in the southern half of the Island – Fort (1510), Colaba (502), Bhuleshwar (4362), Girgaum (1721), and Mandvi (2057) – which still totalled less than half of the enumerated properties in Newland's Survey.

What Maps Do

Maps and plans are the most direct and literal ways of representing the history of cities – they suggest spatial unities, boundaries and uses which have formed and stabilized over time. Maps both spatialize these these representations into concrete geographic facts – of streets, buildings, places and points of interest which are depicted in the map – and transcendent containers – the boundaries, scale and projection of the map which center the map as representation. It is this "double illusion" of space – of the *opacity* of the physical spaces depicted by the map, and the *transparency* of the mental space which centers the map. The map naturalizes the representation of the city as socio-technical system and centers it in a realistic depiction of territories, boundaries, geometries and associations.

Maps present a "view from above" of how state power was spatialized in the territory of the city and region through territorial depiction and symbolic abstraction. As

signifiers of urbanization as a process, they simplify the conceptual and spatio-temporal relations of places and things into an intelligible and meaningful image. Maps depict their territorial object and enrol their subject in the ever-increasing scales required to annex new spaces inside and outside the city, and this increase in scale results in the abstraction of space into commodities and the "numbers game" of speculative urbanisation. The following chapter explores this process in the circulation of capital in the built environment and cityscapes which emerged in late colonial Bombay City in the inter-war period.

As seen in the municipal backlash against the Bombay City Survey Act and its eventual elimination of the "inquisition" into ownership, surveys, maps and property registers are not simply a crude inscription of "power" in "space" – as if physical space is simply a container for power relations – but rather as the unstable outcome of topographic and juridical attempts to set boundaries, enumerate assessment or compensation, and fix possession and ownership. This and the previous chapter demonstrated how this exercise of power is interrupted and frustrated by litigious claimants in colonial courts, and landed elites in municipal bodies, in opposition to colonial surveyors, planners, and engineers.

As places change and grow, maps are in constant need of revision and maintenance for their power to be reproduced and the network to maintain its enrolment in the form being represented by the map. We therefore need to understanding maps less as

a totalizing gaze or "geographical panopticon" than as a partial and fragile hegemony which must constantly work to enrol the observer in the verisimilitude of its always changing object. The scale of representation by which the map successfully depicts its object and enrols its public is dependent on this constant work of representing the place depicted at ever increasing scales. Successful maps depict these incommensurable levels into a continuous surface, reproducing their scales both of depiction as well as of explanation across wider swathes of space.

Rather than seeing maps as simple inscriptions of ground truth, or crude dualism (of "power" reified or "inscribed" in "space"), we need to see maps as the fragile outcome of the contradictory demands of synchronic and diachronic representation – between opacity and transparency – constantly subject to sabotage and disruption by facts on the ground and in need of revision at ever increasing scales, a source of both instability and aggrandizement for map-makers. Scale, in this sense, is an outcome of a stabilized actor-network which can successfully expand itself while being seen a simple fulfilment of already-made closed systems – in this case, the the colonial city and its roads, buildings and properties, or other objects of depiction in maps. These depictions are in need of careful maintenance for their power to be reproduced through the fragile "actor-network" which the map stabilizes. However space continually "acts back" on the map, and the objective and smooth surface which maps represent is always in tension with the actually uneven geography of the city, its constantly expanding edges and surfaces.

This hiatus between the Revenue Department of the provincial Government of Bombay and the Municipality reveals the swampy surfaces and ambiguous boundaries of landed property at the turn of the century. Titles to land and the boundaries of holdings frequently overlapped and were subject to contested claims when the question of ownership arose – either at the point of sale or moment of acquisition. Both the enumeration of properties as well as further facts on the ground remained disputed or subject to vagaries of naming, bounding and identification – though the evidence available suggests there was a brisk trade and change of hands in centrally located lands in Bombay's inner city throughout the late nineteenth century.

As seen in the previous chapter on the land acquisition proceedings of the BIT, when claimants were called upon to produce sale and transfer deeds, it was not necessarily the case that precise boundaries or measurements of plots and parcels accompanied their change of hands, let alone a rough description. Within several years this situation had resulted in a flood of litigation as the BIT embarked on ambitious projects in the north of the Island which became bogged down in acquisition proceedings.

6. Buildings

The Great War & The Trust

This chapter explores the built environment created by the Bombay Improvement Trust on its newly acquired estates throughout the Island City, where its improvement schemes with varying emphasis on sanitary housing, arterial road building, and suburban housing routinised practices of building design and construction, property development, and housing and habitation in early twentieth century Bombay city. Buildings are physical containers which give shelter and provide shape to social reproduction. Buildings and the urban environments nurture, constrain, limit and transform those who inhabit and pass through them, and as social spaces can signify a bundle of rights and claims, a sink for capital investment, a locus of legal and property relations, a stage for politics and performance, and a set of resources for survival and mobility for their designers, inhabitants and owners.

The BIT was borne of the plague epidemic and the urban and regional crisis which ensued in Bombay and other port cities of the British Empire, and its mandate to reconstruct the city along sanitary lines, armed with broad powers of borrow and invest capital in land acquisition, slum demolition, and estate development transformed the city both spatially and socially between 1900-1920. The Trust's avowed mandate to "clean up" the city in the wake of the plague epidemic through sanitary and slum improvement remained bitterly contested through World War I

with municipal politicians and the public, who kept up a chorus of criticism against the Trust's neglect of housing the poor and improving public health in its nearly two decade existence. The plague epidemic abated by 1902-1903 and no major outbreak of disease on the same scale occurred until the global influenza epidemic during World War I. The first two Chairmen of the BIT, W.C. Hughes (1899-1900) and S. Rebsch (1900-1908) were civil engineers who presided over the immediate aftermath of the plague. James Peter Orr assumed the post of Chairman in 1908 and would remain through the war years and their aftermath, retiring in 1919.

As its longest-serving Chairman and most voluble advocate of reforms in urban housing, building and sanitation, Orr defined the BIT through its most active years, and enlarged the landed estates of the Trust as well as reoriented its policy approach. His legendary haughtiness also became a lightning rod of controversy for the increasingly strident civic nationalists in the Municipal Corporation, who from the outset of the Trust's activities sought to exercise greater municipal and local control over the authoritarian body. The vociferous opposition in Bombay to the Trust's schemes during the war years and the colonial government's postwar efforts to better manage public opinion in India in favour of British rule prompted the Government of Bombay in 1918-1919 to solicit official views on whether to finally concede the long-standing demand of Indian politicians and elites to transfer the powers of the BIT to the Municipal Corporation[188]. By the early twenties, as the land market was

188 *Proposed Transfer of Control of the City of Bombay Improvement Trust to the Bombay Municipal Corporation* (Bombay: Government of Bombay, 1919)

still booming, the future of the Trust hung in the balance of the administrative reforms of the provincial Bombay Government under the Morley-Minto 1909 "dyarchy" scheme devolving greater power to provincial ministries in a measure of greater local self-government.

It was often contended by the Trust's critics in the Corporation and nationalist press (especially the *Bombay Chronicle*, the newspaper begun by Sir Pherozeshah Mehta in 1911) that the Trust spent much more of its resources on laying out wide avenues for motor-car enthusiasts and acquiring vast tracts of suburban land for speculative purposes at public expense, than attending to the congested localities where the plague originated. Having clashed with the Corporation repeatedly over the question of street schemes versus slum improvement, Orr was sensitive to these shifting official views on the role of the Trust and public demands for greater municipal control, Orr stepped up his defence of the Trust's policies and twenty year history of work in his final months as Chairman in early 1919.

Orr deployed his favourite dichotomy of "direct attack" and "indirect attack" on the slums to characterise the history of the Trust's various schemes from its inception in 1898. Of the first six schemes of the Trust declared at its formation, only First Nagpada (Sch.1) was a "direct improvement scheme" via wholesale land acquisition and redevelopment of the 15 acre precinct in the areas where the plague mortality had been highest. He claimed that the first two cross-town avenues Princess Street (Sch.2, 25.8 acres) and Sandhurst Road (Sch.3, 53.9 acres) which were driven

through the densest quarters of the Native Town and inner-city between 1902 and 1911 were "indirect improvement schemes":

> designed to alleviate slum conditions by bringing sea breezes into the heart of the congested area. They combined direct methods with indirect inasmuch as the ventilation shafts they created in the shape of Princess Street and Sandhurst Road were so aligned as to wipe out a number of very bad slums such as Chandanwadi, Raswadi and Mahajanwadi, Antobawadi, Patakwadi, Kitchen Garden Lane, Mullackwadi, Kumbharwada, Nagpada (old), Mohhamedkhan Pakhadi District and Nowroji Hill, covering some 25 acres in all[189].

As seen in the conclusion of Chapter 4, S.M. Edwardes had reported that by 1907 Princess Street and Sandhurst Road had witnessed the highest recorded land values in their immediate vicinity[190], and Orr himself had earlier admitted that the "direct attack" method failed to improve slum conditions as the population displaced from the Trust's estates simply migrated to nearby areas where building rents were lower, rooms were available, and sanitary regulations were not as strict as on the Trust's estates. In the same meeting Orr noted that in the Bhatwadi scheme (Sch.33) south of Sandhurst Road undertaken in 1907 on representation by the Municipality, the original settlement had 237 tenements which were demolished to leave only 51

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189 BIT Proceedings, Meeting of 29 April 1919, Trustee's Resolution no.275, Circular no.238 of 1919, pp.173-175

190 Edwardes and Campbell, James M, *The Gazetteer of Bombay City and Island.*, SEE ALSO PAGE XX ABOVE

tenements "and consequently a much reduced population (but of a higher class then were originally *in situ*) has since taken place of the original slum".

Under the 1898 City of Bombay Improvement Trust Act, the BIT was bound to frame schemes for areas "represented" by the Municipal Commissioner and Corporation for immediate sanitary improvement by the Trust. After Sch.1 First Nagpada, the first area to be "represented" to the Trust by the Municipality was Mandvi Koliwada (Sch.8, 7.5 acres) located near Bhendi Bazar, notified in 1902. After a proposal to represent the Bazargate or "Forth North" area – a Gujarati and Parsi merchant and residential enclave of 50 acres inside the city's business district – was considered and rejected due to opposition by local Gujarati and Parsi traders in 1903, the Municipal Commissioner, Harvey, acted independently of the Corporation and sent a long list of twelve other "represented areas" aggregating around 160 acres to the Trust in 1905.

Orr nonetheless by 1919 articulated the Trust's long-term programme as one of dispersing the population from the congested areas, rather than "rearrangement and reconstruction of existing buildings". He characterised the elite housing estates in Gamdevi (Sch.4, 38 acres) on the west of the Island, and the planned garden suburbs at Dadar-Matunga (Sch.5, 355 acres) and Sion-Matunga (Sch.6, 409 acres) as "all measures of indirect attack on the slums, being 'expansion schemes' designed to create out of land which was then largely low-lying and malarious, sanitary building estates to which people of the middle classes might be attracted from the congested

areas". Orr even went so far as to characterise the Trust's first scheme initiated after its inception, the East Colaba Reclamation (Sch.7, 16.8 acres), as another "'expansion scheme' under the heading of 'indirect attack'", though it is hard to understand how this sea-facing residential estate dotted with bungalows – later renamed Cuffe Parade – reclaimed from the sea using materials from the debris of demolitions in Princess Street – was anything but a literal land grab for the city's elite[191].

Between 1905 and 1908 the Trust's schemes were focussed on development of the "scheduled lands" vested in the BIT by the Bombay Government, including the Hornby Road and Wodehouse Road avenues in colonial south Bombay, as well as slum improvement through large-scale demolition and reconstruction. Of the twelve areas represented by Municipal Commissioner Harvey in 1905, the Trust annexed many into new street schemes which aimed both at reconstruction of slums and connectivity with the expanding surface of the Island City, including in East Agripada (Sch.32, 57 acres) and Memonwada (Sch.37, 8 acres).

The latter was absorbed into the ambitious Sydenham Road street scheme which the Trust drove through the dense Muslim-dominated Bhendi Bazar area beginning in 1911. Later known as Mohamed Ali Road, this 100-foot wide avenue connected Crawford Market near the Fort and Victoria Terminus to the junction of Sandhurst Road and was circuitously aligned to avoid prominent temples and mosques in its

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191 BIT Proceedings, Meeting of 29 April 1919, Trustee's Resolution no.275, Circular no.238 of 1919, pp.173

path. Memonwada, along with Madanpura and other areas represented as slums by the Municipality to the Trust, were folded into this and another scheme for the widening of the Parel Road north of Sandhurst Road – thus nearly completing the "Eastern Avenue" from the southern Fort to the Trust's estates in Dadar-Matunga and Sion-Matunga at the north of the Island City.

With Orr assuming the post of Chairman in 1909, and well into World War I, the Trust scaled back its notification and acquisition of new schemes, focussing instead on development of its existing estates, as well as providing housing for the Bombay City Police. The colonial police had been re-organised and expanded under the direction of S.M. Edwardes, who as Police Commissioner created a new divisional system of policing throughout the Island City which required accommodation for officers and constables near their stations.

Apart from the experimental Undria Street (Sch.41) pursued by Orr as an experiment in partial reconstruction of existing housing to admit light and ventilation to the congested , the Trust's next major scheme was proposed in 1914 for completing the proposed "Eastern Avenue". This was to be a broad 120 foot wide road from Sandhurst Road north to Byculla and Lalbaugh, aimed at widening the bottle-neck in the mid-town textile mill districts in Suparibaug up to Elphinstone Bridge, near the Trust's suburban estates. The Parel Road Scheme (Sch.43) had long been considered for eventual framing into the Eastern Avenue, to network together the Trust's schemes in the centre and north of the Island City and promote traffic circulation and

suburban migration to the Trust's residential schemes in Dadar, Matunga and Sion. The electrification of the BEST Tramway line which ran its length further reduced the width of the Parel Road, which was the main thoroughfare for bullock cart and motor traffic in central Bombay. As the road scheme would absorb the two slums Tulsirampada and Gujri Bazar earlier represented by the Commissioner for sanitary improvement, the Trust's proposed road-widening Parel Road Scheme 43 was circulated to the Municipality for its approval in mid-1914, provoking a sharp backlash against another Haussmanesque avenue cut through the city at public expense.

Sir Ibrahim Rahimtoola – the prominent landlord who was would soon taste victory against the Bombay Government in moving the amendments to the 1915 City Survey Bill – led the charge in the Corporation against what he claimed was Orr's extravagant policy of "Revenue and Roads" in which "the health interests of the city had been sacrificed by the Trust at the altar of communications" and "for the convenience and comfort of a few who want to drive fast". Jamshetji A. Wadia, a municipal corporator, moved an amendment to the Corporation's report that, rather than road-widening, the Trust should "apply their available resources for the greater good of the greatest number"[192]. The Trust had by this time, according to Orr, a surplus of over Rs 100 lakhs or ten million rupees. Hormasji Modi, while regretting the partisanship which opposed public health to communications, alleged that the

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192 "Parel Road Schemes", Times of India, 2 July 1915

Trust "had valuable property in the north of the Island for the development of which broad thoroughfares would be useful"[193].

Despite the rate-payers in the Corporation voting almost unanimously against the Parel Road Scheme in The Trust would eventually get its way, though the Government – treading warily on Indian public opinion during wartime – directed the Trust to finally withdraw from acquisition of a large number of properties abutting the new road which had jumped in value between the notification of the Parel Road scheme and its declaration in 1916. Unlike Sandhurst Road or Princess Street which aimed at "ventilation" and reconstruction of the inner-city, the Parel Road was re-aligned and its width shortened to a path of least possible resistance.

In response to his critics in the Municipal Corporation who decried the Trust's focus on "streets versus slums", Orr argued that road construction and easing circulation combined the indirect and direct attacks on the core problem of slums and insanitary housing. Orr's rhetoric classifying suburban and street schemes within the wider mandate of the Trust to provide sanitary housing for the poor – and the annexation of the outlying villages on the urban edge as "slums" in the final years of Orr's tenure as Chairman in March 1919 – was, according to Rao, "part of a larger epistemological transformation implicit in the Trust's recasting of suburbanization as part of indirect attack on the slum problem"[194]. The final major schemes of the Trust, declared and

193 "Bombay Corporation: Parel Road Scheme Discussed", Times of India, 9 July 1915

194 Nikhil Rao, *House, but No Garden: Apartment Living in Bombay's Suburbs, 1898-1964* (Minneapolis: University of Minnesota Press, 2013), 28.

notified in 1919, witnessed a final spree of large-scale land acquisition for new street and improvement schemes in which more than 1135 acres were proposed for acquisition. These new schemes (Sch.52 Worli, 400 acres; Sch.56 Dharavi, 600 acres; Sch.57. Sewree-Wadala, 250-260 acres) encompassing the coastal fishing villages in Worli on the western seafront, and Sewree, Bhoiwada, Wadala and Dharavi at the north-eastern limits of the Island City, adjoining the earlier Dadar and Matunga estates. With a net area available for leasing of 859 acres, Trust official R.H.A. Delves confidently reported in March 1919 that "at 200 to the acre, there will be room for 2,27,000, one-fifth of the total population of Bombay in these new estates" which the "public will take up at rates which will easily cover the cost of execution"[195].

Delves – the chartered surveyor who had been with the Trust for more than a decade in various roles as land manager and assisting the Tribunal in valuation – calculated that the market value of land in these outlying villages on the edges of Bombay averaged around Rs 8-8.8 per square yard.

"Haussmanisation"

By the turn of the twentieth century, the extensive reconstruction of Paris under the Second Empire of Napoleon III and his prefect Baron Haussman between the revolutions of 1848 and 1871 had already been rendered into the expression

[195] BIT Proceedings, Trustee's Meeting of 25 March 1919, T.R. 122, see also Land Acquisition Committee Report no.1, 14 March 1919

"Haussmanisation" in French, a term to describe an urban comparison to the extensive demolition and reconstruction of Paris in the mid-nineteenth century which transformed the medieval conditions of the French capital into a national and imperial "capital of modernity". Though its project of urban redevelopment was prompted by a sanitary crisis rather than a political upheaval, much like the Second Empire, the "Haussmanisation" of Bombay City by the Improvement Trust reached far beyond its original mandate to find a "spatial fix" to the contradictions of urban capitalism, and unleashed forces which it could not ultimately control.

David Harvey's lifelong work on the historical geography and "geopolitics" of Paris during the Second Empire, and in his *Paris: Capital of Modernity*, explores in turn the interlocking themes of money, time and space with his focus on the circulation of capital in the built environment. Like Haussman and Louis Napoleon in 1850-1870, the BIT from 1900-1920 both set out to address the immediate turmoil of the plague and the sanitary crisis – through slum clearance, street schemes, and efforts to promote de-congestion and circulation of people and commerce – and were forced to confront a range of issues from land acquisition and compensation to the problem of market value and ownership of urban land. These raised wider issues of the role of the state in relation to the land and housing market, the authoritarian powers of the Trust and its ability to master the market or control the waves of speculation in land

and property which its operations unleashed across the Island City over twenty years[196].

Though the Trust continued to be the target of criticism and opposition by the dominant landlord faction in the Municipality, the leasehold system and building regime of the Trust created material foundations for a new alliance between landed interests and the colonial state, as the city's economy recovered and grew in the first two decades of the twentieth century and Trust lands provided a "sink" for propertied elites and investors to speculate in urban land and buildings.

On all of the Trust's acquired estates or "schemes", lands were sub-divided into "plots" which were sold by public auction or private offer by the Trust for erecting buildings under a leasehold agreement. Bids in auctions and sales of plots were for square yard area on which the bidder was willing to pay 4.5% per year as ground rent for the lease on the plot after their building was constructed (this was later increased to 6% during the boom years of 1919, see below). The winning bidder paid an initial security deposit for the lease agreement on the plot, after which the Trust then granted the investor a free building period of eighteen months to two years during which rent was waived during construction of the new building. The final lease agreement conveyed the plot and building for periods of 999 years – or effectively in perpetuity – to the building lessee subject to compliance with the sanitary and design rules of the Trust. Agreements to build and the rules of

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196 David Harvey, *Paris, Capital of Modernity* (New York: Routledge, 2003), 99–124.

construction on Trust estates were exacting, specifying and subject to approval by a Trust Architect whose position was created by J.P. Orr after 1910[197].

The Trust leasehold system and building regime put the enormous power and financial resources of the colonial state behind private property investment in the built environment, and its 999 year in-perpetuity leasehold system of land development both consolidated the state as the ultimate "superior holder", sovereign or "fazendar" (see Chapter 4) in the land market while enfranchising the mutual rights and obligations of leaseholders, landlords and tenants on its properties as "improving landlords" subject to the surveillance of the state.

During the first five years of a leasehold, lessees of Trust plots could commute their annual ground rent on payment of a premium of 22 years ground rent, after which they only need pay a nominal rent of Re 1 per year, effectively investing lessees with near-permanent rights in land on Trust estates where final ownership vested with Government. The mobilisation of capital by the colonial state into these circuits of landed property and building construction in Bombay during the heyday of the Trust from 1900-1920 not only created a new capitalist market for urban land, it unleashing forces of speculation and inflation which would trigger a new "mania" for real estate in Bombay during and after World War I. While the Trust remained the largest single actor (and speculator) in this market, the boom and bust in the

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197 F.B. Hawkins and then Robert W. Cable.

mid-1920s would prove its final undoing, when its control was transferred to the Municipal Corporation in 1925.

World War I brought both new-found scarcity, as well as prosperity, to Bombay City. The War and its aftermath in Europe and the Middle East had transformed the political climate throughout India, with populations and the public mobilised by a newly assertive nationalist movement that demanded Home Rule for India for its service to the British Empire. Within Bombay City, wartime prices of basic foodstuffs and commodities, and imported had risen alongside a "house famine" was widely reported as new construction halted and rents spiralled, and sporadic strikes in the mills kept political tensions high. The worldwide influenza pandemic saw mortality levels rise in 1917-1918 to their highest since the plague years of 1896-1898, perhaps carried by returning Indian Army soldiers and officials from fronts in the former Ottoman provinces in Mesopotamia, Egypt and North Africa, as well as refugees from drought-stricken interior districts in Bombay and Hyderabad migrate to cities.

By the later war years, a dense industrial ecology of railways, docks, factories and markets was woven throughout Bombay's inner city, the scene of increasingly militant working-class protest[198]. A new suburban landscape emerged in the city as business diversified its investments outside of the troubled mills and into chemical,

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198 Rajnarayan Chandavarkar, "Workers' Politics and the Mill Districts in Bombay between the Wars," *Modern Asian Studies* 15, no. 3 (1981): 603-647.

engineering and oil industries. In 1914 the colonial government appointed a Bombay Development Committee to inquire into the city's growth, suggest new areas for housing settlement in South Salsette and Trombay Island north of the increasingly built-up and congested Island City. It suggested bringing these areas into the city by extension of the municipal boundaries to encompass the island of Salsette north and east of the Island City. These recommendations of colonial government followed on new developments in the emerging disciplines of town and country planning, which had been enshrined in the first British Town Planning Act in 1909.

In his report on retrenchment and restructuring of the Municipality published after the boom went bust, in 1925, Sir M. Visvesvaraya reported a hundred percent rise in prices for building plots, and doubling and trebling of rents because of a "rush for land in the northern part of the Island". "For a time, there seemed to be no bounds to enterprise and profit" as municipal expenditure on infrastructure, roads, and drainage and sewerage works expanded as municipal coffers swelled with the automatic rise in property rates.

The late war and postwar period between 1917 and 1922 saw a greater "demand for more houses, increased water supply, cleaner roads and better city amenities generally than the people were accustomed to in pre-war days", new wants and expectations which grew "under the influence of a sudden though transient wave of prosperity" during World War I. In 1924, the last formal year of the Trust's independent operation before it was transferred to the Municipal Corporation, its

ninety or so separate estates throughout Bombay covered 19 percent of the surface of the Island City[199]. B.N. Maheshwari, a leading municipal corporator from Matunga in the inter-war period, stated that by 1933, when the Trust was formally dissolved into a municipal department under the direction of the elected Improvements Committee of the Corporation, the BIT had demolished 33,193 slum tenements, reclaimed or filled in 1,332 acres of land for development, of an overall 2,416,000 square yards of land on its buildings estates and 60.9 miles of roads it constructed since 1900[200].

The Trust's Built Environment

The enormous influence which the Improvement Trust had on Bombay's built environment has been the subject of several recent architectural and social histories in the past two decades, notably the popular pictorial book *Bombay: The Cities Within* by Sharda Dwivedi and Rahul Mehrotra. This popular coffee-table book published in 1995 established the influential genre of heritage conservation in Indian modern architecture and urbanism. It struck a chord with the public through its account of the orderly "City Beautiful", the iconic colonial architecture which in Bombay's history spanned the eras of Gothic, Indo-Saracenic and Art Deco, a cityscape which was the outcome of the "efficiency" and "political will" of British colonial agencies

1 9 9 *Annual Administration Report of the Trustees for the Improvement of the City of Bombay*, 1924, p.1

2 0 0 B.N. Maheshwari, *Bombay City -- Fifty Years Ago and To-day: A History of Its Improvement and Some Suggestions for Its Further Improvement* (Bombay, 1940), 7–10.

like the Public Work Department and Improvement Trust in laying out planned estates, constructing monumental public buildings, and establishing a tradition of urban design and architecture. This sepia-tinted architectural history of colonial Bombay, written in the wake of the communal riots in 1992-1993 and published in the same year, 1995, as the city was renamed "Mumbai", contained an elite lament and powerful imagination of the decline of urban public space rand governance in contemporary Mumbai[201].

More recent social histories of colonial Bombay have by contrast highlighted the "failures" to restructure and rationalise the urban space and the built environment demonstrated by the Trust's numerous setbacks with litigants, landlords, and strategies and policies for improving sanitation and rehousing the urban poor. By 1909, the Trust had evicted over 50,000 people from tenements which it demolished in the decade since the plague outbreak, but its new chawls contained rooms for half the number of the displaced. While its acquisition activities drove up land prices – which by 1915 showed that more than 10 per cent of the Island City's surface was covered with Trust estates – less than a third of the land had been developed as permanent buildings, and overall residential housing stock increased by only 11%, though the city's population rose by over fifty per cent between the Censuses of 1901 and 1921.

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201 Sharada Dwivedi and Rahul Mehrotra, *Bombay: The Cities Within* (Bombay: India Book House, 1995).

Social historian Sandeep Hazareesingh marshals these statistics to demonstrate that the Trust was unable to live up to its promises due to the dependent nature of colonial capitalist development and the unquestioned "shibboleth that that urban development should remain driven by the prestige and profit motives of the dominant classes"[202]. For Hazareesingh, this continued Bombay's nineteenth century laissez-faire tradition "in which land and buildings were primarily resources for capital accumulation by urban elites"[203] with predictable effects for the built environment and urban sanitation.

Prashant Kidambi's political history of colonial Bombay is more nuanced in its assessment of the contradictions and crises in which the Trust ensnared itself in the course of two decades in which it "exacerbated the problems that it had been set-up to redress", becoming "entangled in the very bureaucratic mechanisms and legal procedures that had been devised to facilitate its grand design of civic reconstruction". Like Hazareesingh, Kidambi's account of the Trust ends with the speculative land and property boom in 1916-1922, claiming that "notwithstanding the Trust's failure to carry out the tasks for which it had been established, its policies

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202 Sandip Hazareesingh, *The Colonial City and the Challenge of Modernity: Urban Hegemonies and Civic Contestations in Bombay City, 1900-1925* (Hyderabad India: Orient Longman, 2007), 30–37.

203 Ibid., p.26

had profound, albeit unintended consequences for the development of Bombay's spatial organization and social geography"[204].

In these accounts the history of the BIT – and of early twentieth Bombay between the Plague and the Great War – is thus rendered in instrumental terms of success or failure. While the BIT was no doubt "successful" in directing and executing the physical reconstruction of Bombay during from 1899-1925, and no doubt a "failure" in alleviating the chronic overcrowding, insanitary housing, and poor communications and mobility, this chapter seeks to find a more balanced assessment of the career and regime of the Trust which goes beyond of postcolonial nostalgia of urban elites and the failed transitions of dependency theory.

With its transfer in 1925 to the elected Improvements Committee of the Corporation – and its final "amalgamation" with the municipal administration in 1933, with the "Trustees" replaced by a broad membership of the Improvements Committee, and the Chairman replaced by a "Chief Officer" answerable to the Corporation – the apparatus and vast estates of the Trust did not simply succeed or fail, and the Trust's vast estates and legal and bureaucratic apparatus did not disappear. The leasehold system and built environment articulated over more than two decades by the BIT – now under the democratic control of an Indian-dominated Municipality – continued to exercise effects on the city's political economy and spatial relations, nowhere more

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2 0 4 Prashant Kidambi, *The Making of an Indian Metropolis : Colonial Governance and Public Culture in Bombay, 1890-1920* (Burlington: Ashgate, 2007)., pp.???

so than in the emerging "suburbs" in the north of the Island City. Historian Nikhil Rao's recent book on the emergence of apartment buildings on the suburban Trust estates in Dadar, Matunga, Mahim and Sion is a case in point. Rao notes that "it was the Trust's fate to have an ambitious vision that ultimately bore fruit, but because of the intervening history of political transformation, there has always been a strange disconnect between the Improvement Trust and the cityscape that came to characterize post-Independence Bombay"[205].

The "suburbanisation" of Bombay, Rao argues, was articulated in these planned "garden cities" at the north of the Island which until the early twenties had failed to take off (leading Hazareesingh to adduce another "failure") However after the amalgamation of the Trust with the Municipal Corporation through the thirties and forties, the erstwhile Schemes 5, 6, 57, and adjacent town-planning schemes of the Corporation became home to a thriving residential population of office-going middle class Indians in multi-storied apartments whose self-identities was constituted as much by their religious caste or community as the form of housing which they inhabited.

Does the urban built environment embed the tacit knowledge of its original planners and builders, such that their norms and values continue to shape the relations of city-dwellers in subsequent generations? Rao described a historiographic "strange disconnect" between the urban environment reconstructed by the the Trust from

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205 Nikhil Rao, *House, but No Garden*, 21.

1900-1920 and the city which took shape in the inter-war years and after Independence, when the building typologies, housing practices, and legal and engineering methods pioneered by the Trust supplied the generic forms through which the "suburbanisation" of Bombay City was articulated in the late colonial and postcolonial periods.

In 1911, the Census of India estimated that eighty percent of Bombay's residents lived in single-room tenements or "chawls". For most of Mumbai's modern history, the chawl or *chaali* was the flexible building type around which most urban housing in the colonial city was constructed. The essays in Neera Adarkar's *Galleries of Life* study how chawls "have been agents of, and have acted as protagonists in, the city's social reform [and] national movements, class struggles, and... social networks and institutions over the years" (17). Chawls were built by landlords and merchants in the colonial period to house members of their own caste and village communities; by textile mill owners to house their workers as Bombay's industrialisation gathered pace; and by private builders and landlords, as well as the Improvement and Port Trusts, to house the influx of migrant workers, salaried clerks, and government employees.

The durability of the built form of the chawl contrasts with the mutability of the urban society which it sheltered and sustained for more than a century. The basic built form remained consistent – one or two-room tenements separated into

living/sleeping and washing/bathing spaces, with a common corridor or gallery shared between floors, providing access to toilets and water taps shared by residents. Chawls were rarely if ever designed by professional architects. Chawls were erected by contractors and engineers who improvised on this simple and flexible typology based on the limitations of physical site, the landlord's budget, and construction materials.

Adarkar describes how the chawl was more than just a "box" or container "because of the mobile character of its ever-changing facade. The continuous linear balcony popularly known as the chawl 'gallery'... was the spine of the chawl's existence... its changing forms and colours brought a spirit of buoyancy to the interface of the chawl and city, and diffused the boundaries between them... This compounded ethos, a fusion of the physical and social fabric, creatively transformed the built form into a vibrant theatre of life" (15). The adjacent neighbourhood clusters of central Mumbai – the upper-caste and merchant bastion of Girgaon and migrant and working-class mill areas known as "Girangaon" – were respectively white and blue collar, middle class and proletarian, but both of their communities lived in chawls. The variegated possibilities of the undulating spaces of the Mumbai chawl inscribed strong community solidarities, as well as distinct class identities and antagonisms.

As this basic form remained remarkably stable, the uses and meanings of the chawl space changed over time, as literal microcosms of the city's social and industrial history. Early bachelor dormitories for rural migrants working on shifts in mills

(*gaala*) and with shared eating spaces (*khanaval*) in the 19th century gave way to rooms occupied under protected tenancies by entire families (*kholi*) in the 20th century, which in turn gave way to a patchwork of residential, commercial and entrepreneurial uses in present-day chawls. The common toilets, taps and corridors of the early chawls were modified as the *mori* (or *nahani*) for washing and bathing was later interiorised for use by the entire family. In some chawls, further enclosures of corridors and balconies made for attached bathrooms (and in some cases, bedrooms), rendering chawl life almost as "self-contained" as upmarket "flats" in apartment buildings.

Generic building typologies mass produced on on urban scale – apartments, tenements, chawls, skyscrapers and slums – are generative of their peculiar milieus and practices. A house or room is a locus of social relations, but its physical form and structure influence and direct kind of society is constructed both inside and outside its doors, in a co-production or of subject and object. In this sense, can buildings as "actor-networks" provide a way to reconstruct the still largely uncharted history of the circulation of capital in the urban built environment?

American Jusub Cinema

The Alahambra Cinema, owned by Abdulla Joosub Cassum or "Haji Mitha", was located north of the junction of Sandhurst Road East and Parel Road, and was

purchased by Mitha from a previous owner in 1916, taking over the last year of the plot's five year lease with the Trust due was to expire in September 1917. The theatre had been in existence since the Sandhurst Road Scheme was notified in 1902, both as a live performance stage and increasingly as a venue for moving picture screenings using a the novel technology of the cinematograph machine.

Haji Mitha was an early exhibitor and cinema entrepreneur in the period which film historian Kaushik Bhaumik has described as transiting from "cinematograph to cinema" in colonial Bombay[206]. From the turn of the century until the mid-1920s, the technology of cinema arrived in Bombay and new modes of spectating and consuming the media spectacle were shaped by simulataneous changes in the built environment and spaces of everyday circulation and leisure in the rapidly developing midtown areas opened by the Improvement Trust's new street schemes. The new working and lower middle classes now brought under one roof in a darkened, electrified space dedicated to entertainment. This reflected both the wider segregation of residential, industrial and commecial land uses which was inscribed in the built environment north of the old Fort and Native Town in the early twentieth century, as well as a churning and mixing of crowds of anonymous strangers in a modern city forming a new mass public. "Here the cinema was caught up in the interplay of town planning, modern transportation and electrification, and the changing segmentation and distribution of population in the city".

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2 0 6 Kaushik Bhaumik, "Cinematograph to Cinema," *BioScope: South Asian Screen Studies* 2, no. 1 (January 1, 2011): 41 –67, doi:10.1177/097492761000200105.

In the first two decades of the twentieth century, the Trust's new Sandhurst Road estate – driven through the heart of the Island from east to west – anchored an emerging mid-town district of cinemas and theatres, which stretched north to Grant Road and was intersected by Falkland and Lamington Roads on the east and west. Within this quadrant, more than twenty exhibition venues or refurbished theatre stages began screening of silent films in this period, before what Bhaumik calls the "substantial emergence of the cinema hall, when films were screened in makeshift ways in public spaces"[207].

The very first moving picture exhibition of the Lumiere brothers' films had been screened at Bombay's Watson's Hotel on the Esplanade in 1896, and over the next decade the city's hotels, theatre stages, halls, parks and maidans were popular venues for seasonal cinematograph shows, imported spectacles distributed by peripatatic American and European showmen and impresarios who "had their own machines and moved all over the subcontinent giving exhibitions in various cities". Foremost among these early distributors was Maurice Bandmann, who partnered with various theatres and exhibition entrepreneurs in Calcutta, Madras and Bombay in the teens and twenties. Bandmann, with a Parsi partner Jehangir F. Karaka, would establish the landmark Royal Opera House theatre and cinema hall at the western junction of Sandhurst Road with Queen's Road near the western seaface of Bombay. Opened in 1915, within a decade it would set the stage for the cross-town avenue of Sandhurst

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207 Ibid., 42–44.

Road emerging as a district for mass circulation of bodies, images, and stories in the cinema halls which sprouted from old theatres and formerly open grounds going east into the inner-city.

Haji Mitha's Alhambra Theatre stood northeast of the aligment of Sandhurst Road, far east off Parel Road, near the Imamwada Chawls constructed by the BIT between 1900 and 1903 to house those displaced by its acquisition and demolition operations further west for Sandhurst Road. In 1916-1917, the Trust planned an accomodation scheme on the theatre site for the Bombay City Police, as they had already acquired the land on which the theatre stood more than a decade earlier as part of the street scheme, but had let the land on short leases of two to five years. Mitha operated the Alhambra for around three years, holding on to the plot and building for two years after the lease expired. "He finally vacated in June 1919 after a good deal of delay, due to his having sold the buildings on the plot. Government were pressing for possession of the plot, and the Trust had a good deal of trouble in getting vacant possession of the land from Cassum Mitha"[208].

In April 1918 Mitha also purchased the remainder of a two year lease to expire in September 1919 for another temporary cinema hall fronting on the Sandhurst Road and centrally located at the junction with Falkland Road, on Plots 3 and 4 of the

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2 0 8 Proceedings of the Trustees for the Improvement of the City of Bombay, Resultion no.417, Meeting of 29 July 1921, pp.256-257

Sandhurst Road estate. Earlier known as "Darbar Cinema" – probably named after the Delhi Darbar of King George V, whose "coronation" in 1911 was a widely screened news-reel spectacle across early cinema venues in India – this makeshift establishment had been screening films with an imported cinematograph since 1912. Mitha renamed the hall "American Jusub Cinema" in 1918, joining his own name to the rising global celebrity of Hollywood's motion picture industry. The American Jusub Cinema was a semi-open building and ground partially covered by a tent which had been screening imported American and European silent films.

After selling the Alhambra in June 1919, Mitha refused to part with the Jusub Cinema, located on two plots yet to be auctioned by the Trust, whose lease to the previous tenants expired in September 1919. Mitha continued operating the cinema as a montly tenant of the Trust until February 1920, when notice was served on him to vacate, as the post-war real estate market peaked and the Government pressed the Trust to sell the remaining plots in the scheme. Most of these had been acquired a decade or more earlier but remained undeveloped on long leases, until the wartime boom which began around 1916 and lasted until 1922.

Between 1919 and 1920, out of a total of 1819 plots on all the Trust's estates combined, 547 were let out for building leases in a single year, compared with 253 in 1918-1919 and 181 in 1917-1918[209]. In 1920 the Trustees noted with satisfaction –

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209 *BIT Annual Administration Report for the year ending 31st March 1921*, p.23 and BIT Proceedings, Trustees Resolution no.472, 23 November 1920

and perhaps some relief – that "the demand for land on the Trust's estates continues unabated, and practically all the available plots were leased"[210].

At the junction of Sandhurst Road and Falkland Road, across from the American Jusub Cinema, another Gujarati Muslim entreprenur Badruddin Ahmedji had erected an expensive and lavish permanent cinema hall, the Globe Talkies, begun in 1917 and completed in November 1920[211]. Designed by the renowned architectural firm of Gregson, Batley and King and with a cavernous hall and interior garden and refreshment area, the new cinema hall announced the sedentarisation of the cinema hall as a stable cultural and commercial form in Bombay, after around two decades of mobile cinematographs and shifting venues of exhibition and consumption of silent films.

Haji Mitha cited[212] this example of the newly opened Globe Cinema in his letters to the Trust requesting them to grant him a permanent lease to develop the American Jusub Cinema across Falkland Road from Plots 3-4. He cited his losses in the Alhambra, and claimed that when he agreed to surrender the site to the Trust for the police housing in Sandhurst Road, Trust officials had promised his lease application for the new cinema would be considered favourably.

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2 1 0 *BIT Annual Administration Report for the year ending 31st March 1920,* pp.18-24

2 1 1 MCGM Estates Department, Sandhurst Road (West) Scheme 3, Plot 82, "Globe Talkies"/"Alankar Cinema"

2 1 2 MCGM Estates Department, Sandhurst Road (West) Scheme 3, Plots 3-4, "American Jusub Cinema"/"National Talkies"/"Moti Talkies".

> I have incurred very heavy expense not only in constructing the cinema, but also in advertising it. At first it was not a paying concern, but as the result of heavy capital expenses I have succeeded in making it a paying concern and it would be extremely hard on me if I were asked to remove the cinema just at a time when it has become a paying concern. I did this in the hope that as I had acted very fairly with the Trust in vacating the site of the Alhambra Cinema and did not put the Trust to least trouble I would treated fairly by the Trust. I need scarcely add that at the time I vacated the Alhambra Cinema the same was a very paying concern and I could have prolonged my stay there by becoming obstructive and by doing so I would have earned much more than what I might have been obliged to pay the Trust in the shape of costs of litigation[213].

In May 1921, as Mitha had neither vacated Plots 3-4 nor replied to the Trust notices, the Trustees authorised an ejectment suit be filed against him in the High Court, claiming "no promises of any sort were made to him" that "if he quietly vacated the Alhambra plot, he would be given concessions when he had to vacate Plots 3 and 4". Mitha replied that he was also facing trouble with his sub-tenants, against whom he had also filed ejectment suits in compliance with the Trust's notice to quit.

With the cinema still showing films and Mitha under notice to vacate and dismantle the temporary buildings of the cinema, the Trust proceeded with a public auction of Plots 3-4 in October 1921, organised by the private auctioneers Bennett and Company whom the Trust retained for marketing and brokerage of land sales. The conditions of the sale stipulated that the land was encumbered, and the plots would be let by the Trust's Estate Agent as soon as they were cleared of buildings and tenants. The Trust also sounded out the authorities about turning the site into a

213 Letter from Abdulla Jossab Cassum Mitha dated 2 July 1921, in ibid.

permanent cinema. Prior to the auction the Police Commissioner gave their approval to the hall in operation since 1912 for erecting a permanent cinema. This permission was now requisite for the erection of cinema establishments in Bombay City, whose darkened halls and large crowds of often working-class male viewers were regarded as potentially destabilising to public safety and morality. In the postwar period, the "cinematograph technology" earlier associated with the apparatus of projection was now assuming more stable locations in dedicated "cinema halls" designed by architects, and erected by entrepreneurs in collaboration with film distributors.

Despite his complaints of troubles with his sub-tenants and business, Mitha nonetheless appears to have not had any financial problems at this time, as when the auction took place in October 1921 he placed the highest (sole?) bid, and secured his risky investment in the cinema. Mitha was awarded the lease of the plots on which the temporary American Jusub Cinema stood, at the rate of Rs 328 per square yard for the combined 1,415 square yards of Plots 3-4, a total of Rs 4,64,120 with an annual rent of Rs 27,848, rent due to the Trust after a new building was completed on the estate within the free building period. Within a month Mitha had appointed a British architect empaneled by the Trust, D.J. Samson, to design a new permanent cinema hall in compliance with Trust building rules.

The price for the plot paid by Mitha in late 1921, at Rs 328 per square yard, was five times the values of less than five years earlier, reflecting a peak in the post-war property boom in Bombay, which would decline and collapse by late 1922. By

comparison, the neighbouring Plot 5 on Sandhurst Road East had been auctioned to one Bhana Valji in March 1917 at Rs 65 per square yard[214] – around double the rate of a decade earlier.

Through the late war years and especially from 1916 onwards, alongside rising commodity prices, expanding employment in wartime industries and shipping, as well as distress migration from the famine and drought-struck interiors of the Presidency, demand for land and housing in the city rose quickly, and scarcity of construction materials and equipment caused pushed up house rents. Notably, the first wartime rent control legislation was enacted by the Bombay Government to stabilise the city's housing market in 1917, and remained in force after the war ended in 1918 in response to what newspapers kept calling the "house famine".

Cashing in on the land boom, by 1920 the Trust had also revised its ground rent calculation on building leases it gave out from its earlier rate of 4.5% the capital value of the land, to 6%, while simultaneously reducing the rate at which rents could be commuted from 22.5 years to 18 years for lessees. This measure was to both harness the booming postwar land market and give incentives to construction activity on the Trusts' languishing estates.

The Trust disposed of the legal formalities required for Mitha to take possession under his newly awarded building lease, withdrawing the ejectment suit and allowing the old semi-permanent cinema hall to continue business, provided he would pay his

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214 MCGM Estates Department, Sandhurst Road (East) Scheme 3, "Plot 5 Bhana Valji"

rent arrears under the old lease which had expired two years earlier. Mitha also began re-negotiating with his tenants on the plot, two of whom (Madhavdas Shivshankar and Bejonji S. Vakil) on Mitha's behalf paid a security deposit of Rs 2,200 in Government promissory notes and bonds to confirm the building lease with the Trust. The date of possession under his new leasehold and building agreement was fixed in February 1922.

By this time the postwar property market in Bombay had begun to plateau, and Mitha's fortunes changed dramatically. Upon signing his new agreement with the Trust – granting 18 months rent-free for completing construction – Mitha had great difficulty in deciding on his plans and selecting an architect, as he rejected Samson and appointed the Indian firm of Chinoy and Divecha in late 1922. By this time the property market was bottoming out. In late 1923, with the old American Jusub Cinema still in operation, Mitha had neither submitted buildings plans for approval by the Trust nor was responding to reminders of his rent-free building period elapsing.

For the past two to three years, the neighbouring tenant of Plot 5, Bhana Valji, complained to both the municipal Health Officer and Commissioner of Police of a hack Victoria (horse-drawn carriage) stand at the corner of Plots 3-4 "which was a source of great nuisance to the inmates of my building" and was "used by wayfarers for the purpose of urinating thereon". Valji complained that the corner alley next to the cinema had "become the haunting ground of idlers, Fakirs and beggars, who

through round the place, exchange most filthy language between themselves and prove pest [sic] to the inmates of my building". Valji had been complaing of these problems to the Trust since 1920 that

> ...the scene at the said place is found so very shocking at times, that the ladies residing in my building could not possibly stand at their windows, and hence many of the tenants have actually vacated their rooms whereas the rest threaten to vacate theirs. The result is that, as it is, I am at present suffering heavy loss due to vacancy brought about by this nuisance and am likely to suffer a still heavier loss, if the remaining tenants also abandon their tenements and go elsewhere. If the matter reaches such a crisis, it is but clear that I shall not be able to pay the ground rent of this plot, and my inability to do so will be due to your own negligence in removing this nuisance complained of hereabove.

As the makeshift cinema thronged with audiences and the surrounding areas went to seed, in January 1924, Haji Mitha's architects finally submitted their building plans for the permanent cinema hall to be erected on the plot. By this time the property boom in the city had gone bottom up, and Mitha had encountered heavy losses on his investment, as well as another building agreement for two plots 44-45 in Lalbaug, Scheme 31 of the Trust, which Mitha had also purchased but not built on. While the plans sent through his architect for the new American Jusub were quickly approved by anxious Trust officials in March 1924, by this time Haji Mitha himself was untraceable at any of his given addresses in the neighbourhoods of Ghogari Mohalla and Bhendi Bazaar, where messengers and peons were sent to locate him or his family. The American Jusub Cinema remained in a semi-permanent state, with some

buildings removed to make way for the new construction. Rumours in the Golpitha neighbourhood where the cinema stood were that he had become mentally unhinged.

On further investigation, Trust officials learned that Mitha was the nephew of the prominent Sunni Memon community leader and Bombay Council member Sirdar Suleiman Cassum Mitha, C.I.E., who resided in Kholsa Mohalla. However both his uncle and wife, Fatima-Bi, refused responsibility for Mitha's debts and liabilities. He had left behind one son and three daughters who were penniless, and supported by their family. His wife and uncle informed officials that Mitha had been committed to the Colaba Lunatic Asylum for his mental afflictions several months earlier, in April 1924.

In July 1924 the Trust Building inspector Nanavati and Trust Architect placed the site "under constant and careful inspection on account of the unsatisfactory way in which the work of the new buildings was being carried on". The following month, the Trust filed suit in the High Court against Mitha for recovering the arrears of rent which he had left unpaid before disappearing. As his family refused guardianship for his property, the High Court, in its decree on the Trust's claim of rent arrears against Mitha, appointed an official Court Receiver, N.H. Moos, as custodian of Plots 3-4.

In the half-constructed cinema premises, the Trust began to discovered "encroachments" on site. Valji had been complaining to the Trust of the appearance of a dargah (tomb shrine to a Muslim saint) on the site of the hack Victoria stand opposite his building, a shrine to the grave of a Muslim saint named Pir Magrabi

Shah. In October 1924 when the Trust Architect Robert W. Cable inspected the site with the Trust Chairman, they found a deep hold had been dug at the corner of the cinema plot behind several shops in the 1st Pathan Lane, near the entrance to Valji's building. Apparently a second dargah had also been installed in the name of Pir Gaiban Shah in the beneath the gallery of the cinema hall, in the partly excavated hole where the dynamo that powered the cinematograph machinery.

The Trust Estate Agent noted that "at the time these dargahs were erected in March last Mr Abdulla Jusub Cassum Mitha was suffering from some mental disorder and appears to have acquiesced in these unauthorised encroachments being made". Locals reported that a tomb stone had been brought to the site as far back as 1920 to deter the public from committing nuisances along the back garden of the American Jusub Cinema, where the dargah of Gaiban Shah was later installed in the hollow excavated for the dynamo.

On subsequent weekly visits by inspectors until March 1925, no actual shrines were discovered by Trust officials on their site inspections, only signs of excavation. The dargah of Magrabi Shah on 1st Pathan Lane, facing Sandhurst Road and opposite Valji's building, was erected overnight, as a tomb stone was brought on 22 March 1925 and five masons "worked through the night erecting round it a brick wall and tiling the wall and ground around, the ground having been cleared of rubbish". Over the next three nights a tarpaulin was raised over the tomb stone of Gaiban Shah beneath the cinema gallery in the back of the plot, and the dynamo pit further

excavated. Trust inspectors reported that a third tomb stone was also brought to the site by workers, but later removed.

Within two months both shrines had been completed, as inspectors reported in May reported that the new cinema building was half-completed, with a new gallery built up to 16 feet, and below that "unauthorised structures have grown up over what are vaguely said to be tombs". In June the Estates Officer noted that the "unauthorised dargah is being elaborated with stone paving and tiling". The *mujawar* (guardian) of the dargahs was a local holy man named Kurban Shah Aihashan Shah, whom the Trust discovered was living on the spot for the past year since he convincing an unhinged Haji Mitha that his cinema hall was erected on the tombs of saints.

It took the Trust three months to swing into action, on receipt of another letter from Valji's representative, V.V. Contractor, in late July 1925, complaining of the dargah in his lane. "Under the circumstances, I have to urge you to take immediate steps to assert your rights of ownership and possession and remove the trespass and the encroachment". He warned darkly of the consequences, as the sites could become legally immoveable by the law of adverse possession[215]:

> I may point out, as an instance in point, the land at present covered by the durgah just near the Crawford Market and the site of [a] tomb at the back and within the compound of the Victoria Gardens. Both these sites were originally uncovered by any tomb or durgah. Surreptitiously tombs were erected thereon and in the course of time these tombs and the surrounding areas turned into

215 MCGM Estates Department, Sandhurst Road (West) Scheme 3, Plots 3-4, "American Jusub Cinema"/"National Talkies"/"Moti Talkies".

> durgahs. The Government in one case and th Municipality in the other, paid no heed at first to the said trespass, with the result that in the course of time the founders of these durgahs claimed the right to the sites by reason of adverse possession thereof, and both the Government and the Municipality had no other alternative but to lose their land and keep quiet.

On receiving Valji's letter and Cable's report (cited above), the Trust arranged through the Court Receiver to "give immediate notice to the durga trespassers to vacate and give peaceful possession to the Receiver of the land encroached upon by them". The Estate Agent promised the Trust Board "the matter is being carefully watched" and "the Trust are fully aware of the importance of not allowing these trespassers to obtain adverse possession against the Board, or their lessees, or building tenants". Days later the Trust solicitors, Crawford & Bayley, issued a trespass and eviction notice to the Mujawar, and the Trust despatched a crew to demolish the main wall and canopy of the Magrabi Shah dargah on Sandhurst Road. The Trust insisted that there were no tombs at the time the various lands thrown into Plots 3-4 were acquired, and there was no evidence of them at the time of Laughton's Survey in the 1860s, inspections in 1908 or the recently-concluded Newland's Survey (see chapter 4).

Within weeks the suit for arrears and re-possession of Plots 3-4 against Haji Mitha in the High Court was ruled in the Trust's favour, with the lease cancelled, Rs 20,739 to be paid for the lapsed building agreement and balance of security deposits, and Rs 6,913 for arrears of rent. These costs were to be recovered Haji Mitha, as well as from

the sale of the existing structures, furniture and building materials from the re-possessed American Jusub Cinema. The Mujawar of the dargahs protested the partial demolition, claimed the authenticity of the tombs, and invited the Trust Solicitor to meet him on site to reach an amicable settlement.

Since news of Haji Mitha's going mad reached them a year earlier in 1924, the Trust had begun soliciting offers to resell the plot to a new tenant to complete the cinema hall on Plots 3-4, which now anchored a thriving inner-city district in Golpitha with more than twenty cinema halls within the area bounded by Sandhurst, Falkland, Lamington and Grant Roads. The Hollywood-based Universal Pictures Corporation – which had its first head office for India, Burma and Ceylon at Hira House, on the western end of Sandhurst Road – wrote to the Trust Estate Manager in August 1925 on hearing news of the possible outright sale of the American Jusub Cinema that "we are interested in this business and we would like to submit an offer if what we hear is true" (they had most likely not heard of the shrines and their guardian inside the cinema).

The Estate Agent, J.T. Burge, in a handwritten note to the Board stated that the land had been vested in the Trust for over twenty years now (since 1903) in the Sandhurst Road Estate, and while the dargah encumbrances complicated the matter of re-sale, the main issue was the price of land, as when the plot was leased in 1921 for Rs 328 per square yard it was the peak of the boom, and prices had since fallen. Additionally, "nobody but a Mahommedan would be willing to take over these plots

on a new building agreement, especially as it is now understood that Mr Cassum Mitha has now been discharged from the Lunatic Asylum, though still in a mentally unbalanced condition".

Indeed Haji Mitha, in July 1925, suddenly re-appeared at the head office of the Trust on Esplanade Road in the Fort, on hearing of negotiations for re-sale of the cinema plot "by private offer at reduced rent". One interested party, a cotton merchant in Sheikh Memon Street named Haji Moosa Kassum Kapadia (no relation to Haji Cassum Mitha) had offered the Trust Rs 250 per square yard on an as-is basis, along with the dargahs and guardian Mujawar, and an additional Rs 20,000 for the half-constructed building on site (which the Trust had valued at around Rs 1,00,000).

The Trust provisionally accepted his offer, which had been made via a Parsi-owned commercial agency, the Bombay Trade Exchange. This firm, represented by one N.M.N. Wadia, appears to have colluded with the official Court Receiver, N.H. Moos, to split the brokerage to be earned from the Trust for finding a new tenant in Haji Kapadia. Following Haji Mitha's brief appearance at the Trust office several days later, complications emerged between Haji Moosa Kapadia, his broker Wadia, and one Haji Abu – perhaps as news spread within the tightly-knit Memon community in the adjacent neighbourhoods of Marwari Bazar and Pydhonie, where Haji Mitha's uncle, the elder statesman and community leader Suleiman Cassum Mitha had been kept informed of his mentally-ill nephew's attached assets, as N.M.N. Wadia was also his business partner. The Trust cancelled the hastily brokered deal with Haji Kapadia

in September 1925 and in October 1925 accepted Rs 20,000 in debenture deposits from Suleiman Mitha for the building agreement for Plots 3-4, with Rs 1,900 brokerage paid to Wadia of the Bombay Trade Exchange. Suleiman presented a cheque for the remaining amount for the old building, and was handed possession of the plot, with the now-closed American Jusub Cinema and the dargahs still flourishing despite the Trust's demolition job.

In late December 1925 Abdul Cassum Haji Mitha died in Bombay, leaving his wife and four children in the care of his extended family. The Trust still sought to recover arrears of property taxes and ground rent on the cinema plot going back to October 1923 – precisely when the boom in the property market collapsed in Bombay, and Haji Mitha's fortunes had collapsed. More than Rs 2,000 was due which Suleiman Mitha, now represented by his merchant and banker son Mohammed Suleiman Cassum, paid up under compulsion in order to settle the matter. However the uncle refused to pay for the costs of the High Court suit as Haji Mitha "is not my heir", and on his widow Fatima Bi's protest that her husband left her nothing and that she could not repay his incurred debts, the Trust adjusted these fees against Plot 44 in Lalbaug Scheme 31 where Mitha had put up a building before the boom years. The remaining costs were written off by the Trust.

Wadia remained eager for his brokerage for the resale of the lease of the plots on Sandhurst Road, which he asked the Trust to deposit with Thomas Cook and Son in lieu of paying him directly. After the agreement had been signed with Suleiman

Mitha – his son now had the power of attorney for his aging father, for whom Wadia had brokered – in October 1925 a representative of the travel agency wrote to the Trust inquiring whether "the sealing of the agreement is only formal and when this will take place as Mr Wadia wants a little assistance in anticipation of receipt of the amount" Of Rs 1,900 from the Trust for the brokerage.

It emerged that Wadia had advanced Rs 1,000 to Haji Kapadia's business partner, one Haji Abu Noormohamed Cassum, via a third party lender, Ismail Chunawala. He had apparently promised to split the brokerage with Haji Abu, who nonetheless insisted on payment up-front and his name on the building lease agreement. At this time Kapadia, Abu and Wadia had a falling out, and Wadia sought out the Mitha family. Though the Trust suspected the arrangement and cancelled the agreement with Kapadia in September, Wadia subsequently introduced Suleiman Mitha to the Trust, and was paid his brokerage in January 1926, days after Suleiman Mitha's building agreement was signed. His ultimate creditor Ismail Chunawala – to whom he promised to repay the "Rs 1,000 to you immediately as I receive the brokerage of Rs 2,000 from B.I.T. in respect of the lease of the cinema plots at Sandhurst Road, in which brokerage Mr Haji Abu has an equal half share" – filed suit in the High Court in June 1926 against N.M. Wadia and his Bombay Trade Exchange for misrepresentation and fraud. The middle-man Wadia had apparently disappeared.

Though he had the stipulated eighteen month free building period on the agreement, Mohammed Suleiman had by January 1926 pressed on quickly to complete the

re-construction of the American Jusub Cinema, which in late 1925 he renamed the "Crown Cinema", for which he appointed the famous Parsi architecture and engineering firm of Bhedwar & Bhedwar to complete the work begun by his dead cousin Jusub Mitha three years earlier. The Trust Architect issued his completion certificate to the Crown Cinema in May 1925, and the fire policy he took out from the Royal and Lancashire insurance companies – a requirement for all buildings on Trust estates – valued the cinema hall at Rs 75,000, a residential chawl behind the cinema at Rs 25,000 and the cinema gallery and shops facing on Sandhurst Road at Rs 65,000. As the cinema re-opened for business in late 1926 – several years prior to the dawn of sound films in Bombay, or the "talkies" the Trust resolved to write off all remaining debts. The lease for Plots 3-4, Sandhurst Road (East) was finally registered and entered into the assessment books in October 1927 into municipal Rent Roll no.984.

Do Buildings Have Agency?

Do buildings have agency? Or, we may ask, does the built environment have its own subjectivity? Architects, urban designers and planners might answer this question in the affirmative. By contrast, most historians and social scientists have long viewed all non-human artefacts as "socially constructed", and the structure and agency of the built environment remains weakly conceptualised, even in urban studies. This

chapter has sought to show how the buildings created by the Improvement Trust was both an object produced by investors, architects, engineers, tenants and occupants, as well as a subject which exercised profound effects in shaping and structuring society through the obduracy of the built environment.

In a well-known essay on the question "do artifacts have politics?", Langdon Winner cites the example of the low-lying bridges designed by planner Robert Moses along the parkways of Long Island he constructed. These passages beneath these bridges were too low to permit movement by public buses between the roads and public beaches. Moses' bridges prevented access to these elite white spaces of recreation by inner-city black populations, thus inscribing a permanent spatial discrimination into the design of seemingly apolitical technical artifact.

The built environment of cities both constrains and enables the activities and lives of its inhabitants and users, channeling and directing people into abstract patterns of residence, exchange and transport on the one hand, while the social spaces of the neighbourhood, market and transit hubs provide resources for social organisation and reproduction on the other hand. However, the urban fabric and environment is itself subject to negotiation and contestation through business-entrepreneurial projects of profit-making and asset-stripping through spatial restructuring, mass movements to protect and expand the rights to collective consumption and social reproduction, and state initiatives aimed at sanitary "improvement" through the planning and design of public spaces and housing. It is in this context that the built environment as

socio-technical ensemble exercises its peculiar structuring effects on urban development, politics and everyday life in the city. Artifacts become instruments of power while power relations are materialised in artifacts (Winner; cf. Bijker, 4).

Buildings may stand still, but people never do. While physical structures cannot speak or act by themselves, their ability to "act back" on society is revealed at the limits of other forms of human agency, from elite hegemony to popular resistance. Indeed it is this very obduracy of buildings which shapes and directs the agency of their inhabitants and users. The urban environment, once built, becomes a deep structure both underlying and directing the activities of subsequent generations.

CONCLUSION

Bombay Between the Wars

By the end of World War I, with all-India administrative reforms and the first devolutions of power to provincial ministries, the Improvement Trust was dismantled and absorbed into the Municipal Corporation between 1925-1933 and its mandate of public housing and suburban development were transferred by the provincial Bombay Government to its newly setup Bombay Development Department (BDD) in 1919-1920. The BDD was created with the aim of taking over and initiating new mass housing schemes for factory workers and consolidating various land reclamations throughout the city and developing new suburban infrastructure in Bandra, Andheri, Kurla, Ghatkopar, and Thana in Salsette.

J.P. Orr, the voluble chairman of the Trust in its most active decade of chawl construction, retired early from the Indian Civil Service and returned to London in 1920 to direct planning and housing in the London County Council until 1922, and remained active in writing and advocating on housing reform until 1930. Metropolitan town planning policy in turn influenced the efforts of the late colonial, interwar and post-Independence Congress Governments in Bombay to address the city's postwar housing crisis through new legislation on rent control, urban planning, housing boards and encouragement of cooperative societies for housing, credit and banking institutions in Bombay, amidst a wider democratisation of municipal power

from the twenties onwards. In 1922, the Municipality changed the electoral franchise from rate-payers of taxes on landed property to city residents who paid a rent of at least Rs 10. By 1931, the Municipal Corporation increased its number of elected seats from 76 to 86, and in 1936 the franchise was further widened to rent payers of Rs 5 or above. In 1938 full adult franchise within Bombay City for the Corporation elections was proposed to take place by 1942 (though due to the outbreak of World War II this took place in 1948 for 106 seats across 36 electoral wards).

During this period, as a new generation of Indians were recruited to the expanding apparatus of municipal and civic administration, and provincial state power was devolved to Congress ministries, groups of Indian and expatriate intellectuals in interwar Bombay instituted new research practices and policy regimes whose geneology remain with us in the contemporary city. Bombay's housing and labour markets served as the paradigmatic example of colonial exploitation for nationalists advancing ideas, plans and practices for a new planned economy, through which the urban environment and economy was made an object of discourse and intervention in the interwar period. New academic institutions such as the School of Economics and Sociology – formed when Bombay University was reorganized into research departments on the advice of Scottish town planner Patrick Geddes in 1919 – combined economics with "applied" sociology and "social surveys", producing a remarkable series of first-hand ethnographies of the social worlds and market practices in the interwar city and region. The bibliography of the Bombay School

includes studies of urban welfare agencies and voluntary bodies, cotton marketing and futures trading, cooperative finance and credit, wartime price controls and rationing, and a series of regional surveys of urban and village labor. The newly formed Civics & Politics Department of the University, also formed in 1919 and named after the late Pherozeshah Mehta, the "Lion" of the Corporation who passed away in late 1915 – was devoted to training Indian graduates in the emerging "science" of civic administration and municipal electoral politics.

A kindred institution in this new network of intewar social institutions emerged in the inner-city Nagpada Neighbourhood House (NNH), a "settlement house" on the American model for inner-city youth upliftment, was established in the Trust's original Scheme no.1 by the American Marathi Mission, the Indian branch of the Methodist Church. The Neighbourhood House was led by the missionary-turned-secular social reformerClifford Manshardt, a veteran of the Great War and graduate of the University of Chicago Divinity School who gave up the mission in a hill station in Bombay Presidency to return to the colonial city to and pursue a secular gospel of "social work" amongst the urban poor.

Manshardt was a prolific lecturer and organiser, and the NNH was largely responsible for introducing the inner-city American sports of basketball – as well as boxing – to late colonial Bombay. By the thirties, the NNH had become a hub of lectures and seminars on social services and the state of the city, as Manshardt used his official contacts with Government to establish an unofficial platform for urban social reform

and education between an increasingly antagonistic nationalist leadership and colonial officialdom – as well as the engineers, lawyers, doctors, architects and professionals who worked within the municipal bureaucracy during these years. Manshardt began a School of Social Work at NNH, and his activities and contacts eventually attracted the attention of the industrialist J.R.D. Tata, who invited him to establish what would become the Tata Institute of Social Sciences, founded as a graduate school of social work education in Bombay in a modernist suburban campus in 1950. For migrant intellectuals such as Manshardt and Geddes, as well as nationalist economists and social scientists such as C.N. Vakil and G.S. Ghurye, interwar Bombay City became a laboratory for organized research by economists, social workers and survey takers whose expert skills and disciplinary forms were first worked out in the late colonial city – and later recruited into postcolonial state planning and research institutions sponsored by New Delhi in the fifties such as the Delhi School of Economics and Planning Commission.

These socio-technical disciplines of social work, urban planning, and civic welfare shaped the institutional fabric of everyday urban life and modernity in India. The global circulation of kindred concepts and practices in other rapidly urbanising nations such as Japan, Germany and the U.S. in the interwar period – and their geneaology in the cosmopolitan urbanism that emerged in Bombay between the wars – awaits a further inquiry. The formation of these ideas and institutions in late colonial India has heretofore been studied mostly from the perspective of the history

of Indian nationalism, and the subsequent history of the nation-state's assimilation of specifically urban concepts and practices in the postcolonial period.

Greater Bombay

In 1945, the Bombay Government setup the City & Suburbs Postwar Development Committee, of which fully half of its official report published in March 1946 was an appendix containing a lengthy "Note on Greater Bombay" by N.V. Modak, Chief Engineer of the Bombay Municipality, who also served as secretary to the committee and its town planning panel. An extended version co-written with the American architect Albert Mayer – then consulting planner to the BMC – and published unofficially in 1947. While Modak's dreamed-for master plan was not adopted, in April 1950 "Greater Bombay" was officially created to merge the administration of the former South Salsette District with the city, whose governing body was thus renamed the Greater Bombay Municipal Corporation in a new Municipal Act of 1951. Besides extending the municipal boundaries north to incorporate former independent villages and municipalities such as Bandra in Salsette – as well as Notified Area Committees in emerging suburbs which were formed by resident elites in Andheri, Malad, Parle, Santa Cruz – the new act also contained the first zoning regulations to direct industrial location into the suburbs of the newly constituted Greater Bombay.

In the thirty years after World War II and Independence, the population of Greater Bombay tripled, adding roughly two thirds people from the mid-forties to mid-seventies. With urban growth multiplying in scale and magnitude, planners and elites faced the challenge of containing and directing urbanization with the shrinking resources of a city whose natural boundaries marked the limits of its growth. Modak had, as early as 1947, called for the creation, alongside Greater Bombay, of a "multinucleated metropolitan region" which could accommodate this ever increasing scale of urbanization outside the formally annexed territories inside Greater Bombay. A year after the first DP was notified in 1967 the Government of Maharashtra appointed a committee chaired by distinguished economist D.R. Gadgil which recommended the formation of a Bombay Metropolitan Region Planning Board, whose task was to draw up a Regional Plan for the next twenty years.

The 1954 Bombay Town Planning Act generalized this functional logic to cover residential and commercial locations and formalized the functional separation of industrial, commercial and residential land uses into distinct objects of policy intervention. It also obliged the Government for the first time to prepare a comprehensive Development Plan for Greater Bombay. In 1952 and 1957 the municipal limits were further extended to annex North Salsette in the up to Mulund in the east and Dahisar in the west – the current limits of what is today known as Greater Mumbai.

The Greater Bombay Development Plan (DP) was first prepared in draft forms in 1961 and 1964, but only officially adopted in 1967 after 13 years of "stately progress" since it was first mooted in the 1954 act. The new classifications of land use and their differentiation under policy regimes for industrial licensing and location, public and private sector housing construction, and development of public spaces and infrastructure were cut short by the costs of implementation. It remained an "illustrious document without much practical implication" whose "strongest elements lay in the area of land use controls and zoning rather than 'development' proper" (Harris, 41).

While for planners its practical import was stunted by the impossibility of its execution, the DP marked a profound break with past practices of spatial planning and urban development. The novel concept of floor space index (FSI), introduced with the 1967 DP, was the most significant aspect of this break with earlier regimes. FSI was a simple numerical ratio of the size of a given plot of land in the city – its "floor space" – to the amount of built-up or developed area permitted to be built on that plot. Expressed as a simple number which could be assigned to entire zones of urban land, FSI was an instrument which promised to normalize urban development across the uneven spaces of the city with their different and incommensurable practices of construction, habitation and land use by creating a simple and powerful equivalency between plot size and built-up area regardless of shape or form or location. Now the urban environment would be governed by the all-encompassing

rule of scale which FSI created by exchanging physical land for its potential for development. At the stroke of a pen, FSI would direct development in and out of different areas of the city by the simple application of a number.

This value subsumed the literal height of buildings or the degree of their setback from their street – as in earlier policies of the Improvement Trust or Housing Boards – into a simpler and more sovereign calculation which emancipated the exchange values of a plot of land from its social, ecological or local context of use. Thus freed from their use values, FSI sought to direct from above the production of exchange values across the space of Greater Bombay, limiting construction in congested areas and directing development to suburban and peripheral localities north of the old Island City.

The 1970s were a time of profound institutional change whose outcomes defined the institutional framework for urban development which exist today in Mumbai. From the early to mid-seventies, following the logic of the earlier Development Plan, a raft of new development controls, policy instruments, and public authorities aimed at the "decongestion" of Greater Bombay within the context of a newly enlarged Plan for the Bombay Metropolitan Region, a unit whose administrative outlines defined the final frontier of urban policy to this day. The state took up the responsibility of providing new housing stock through the Housing Board and later MHADA (Maharastra Housing and Area Development Board). Land for housing the poor was was sought to be acquired through enactment of the Urban Land Ceiling Act in 1971 whereby a ceiling was defined for private ownership of land and the state taking over

remaining land. An Industrial Location Policy prohibited the setting up of new units, or expansion of existing units — except small-scale industries — in the Greater Bombay, Thane and Mira-Bhayander zones of the BMR. The Office Location Policy notified in 1977 by the Government, and made part of the Development Control (DC) Rules, sought a ban on new offices in South Bombay. Most centrally – and outside the scope of this paper – the Government setup the City and Industrial Development Corporation (CIDCO) which was charged with creating an entirely new city across the harbour in former agrarian lands which became known as "New Bombay" – at the time, the largest planned urban area anywhere in the world. In 1975, the regional planning board was turned into the Bombay Metropolitan Region Development Authority (BMRDA) which was charged with the execution of the Regional Plan to direct development and planning throughout a vastly expanded realm encompassing a space of 4,355 square kilometers, containing within its boundaries the old Island City and Salsette areas of Greater Bombay and adjacent parts of Thane and Colaba Districts.

Since the promulgation of the first DP in 1967 and the expanded grid of reserved land uses and restrictions on industrial and commercial locations, FSI in most parts of Greater Bombay had been fixed at 1 or 1.33, which was lower than that already consumed in most parts of the city, whose skyline rarely extended beyond three or four story buildings throughout Greater Bombay. The practical import of the shift in planning policy which FSI augured in the late sixties hardly touched the built

environment until the seventies and eighties, when these instruments for regulating the scale of building activity began to take effect in parallel with the rise of the private builder as the new agent of urban development. FSI began as a policy instrument to regulate and direct the scale of construction activity by detaching the built-up area from the size of its plot through an abstract ratio which could be applied as a rule across entire areas of the city zoned as residential, commercial or industrial. Emancipating exchange values from their physical location and creating equivalencies across the uneven space of the city, FSI laid the basis for the commodification of urban space through an increasingly sophisticated game of numbers.

This was played out between the state and the city's construction industry, whose size and power was growing parallel to the decline of the city's manufacturing sector and particularly its historic textile industry, which was paralysed by the Bombay Textile Strike which began in 1982. The strike continued inconclusively for more than two years as mill-owners used this last stand of organised labour to restructure through forced layoffs, outsourcing to powerlooms, and redevelopment of their centrally located industrial lands to other, more profitable uses in the service sector. This pattern of deindustrialization – common to industrial cities throughout the world in the seventies and eighties – set the stage for the emergence of the builder as the most powerful agent in shaping the post-industrial urban environment.

FSI took on a new significance as commodity form in Bombay throughout the seventies and eighties, first through what was known as "floating FSI" and subsequently through "transferable development rights" (TDR), as planners rendered what was earlier a policy instrument into a mobile commodity. First introduced in the eighties in response to the uneven impact of FSI in promoting development in pockets of the city where builders and the real estate market would not go, the new policy allowed the unconsumed FSI on a plot to be utilized in other parts of the city where FSI had already been maximized – allowing the transfer of of value from one area to another across a stabilised and commodified scale of accumulation.

These "transferable development rights" thus rationalized the extraction of surplus from generally poorer areas – peripheral, slum or other low-income pockets – into more profitable channels. This was subsequently rationalized through the ideology of "decongestion", as TDR was directed north of the Island City to the suburbs, where density and development remained markedly lower than in the older built-up areas. The success or failure of this policy as a planning instrument to directing growth into the suburbs via spatial and market incentives remains subject to intense debate in Mumbai, but there is no dispute over its institutional form.

Space is now a tradeable commodity increasingly concentrated in the grasp of private builders, who by the nineties had achieved a near-monopoly status as agent of urban development. As the state retreated from its ambitious socialist agendas of land acquisition, development planning, and housing construction for the poor through

the liberalization of the 1990s, FSI/TDR become more central than ever to urban policy, as the state ceded to builders more rights over land, housing and planning via new mechanisms such as the Slum Redevelopment Authority (SRA) introduced by the Shiv Sena-BJP Government in 1995 which gave nearly unlimited TDR to builders willing to rehabilitate and redevelop lucrative inner-city slum and tenement plots. Ironically, within thirty years the regime of abstract space first signified in the 1967 Development Plan had come full circle – the policy instruments meant to control and direct the activities of private builders had in fact facilitated their hegemony over the space of the city. FSI/TDR was turned into an instrument of real estate plunder by what has now become known as the "builder-politician nexus".

Until the 1990s, Indian planners lamented the runaway scale of urban growth and the constant pressure on the city placed by inward migration and outward expansion, viewing the city as a necessary but insoluble evil. The combination of overpopulation, untenable densities, collapsing infrastructure and social unrest into this meta-explanation of urban growth rationalizes the common policy response – to decapitate the monster by placing limits on settlement, development, and growth through policies of decentralization and depopulation – often through violent demolitions of slums and deportation of their residents.

As urban geographer Nigel Harris noted more than thirty years ago in his study of urban development policy in Bombay, postcolonial planners and the public based nearly all their explanations of the runaway scale and form of urbanization in

Mumbai in twin terms of *overpopulation* and *land scarcity*. This meta-narrative of overcrowding – the familiar story of "development" not "keeping up" with population – became both the precondition as well as the outcome of contradictory and defeatist view of urbanization as a process which remained the hallmark of urban planning in India until the nineties. "In almost all Bombay's planning documents it is assumed that the 'pressure of population' in a limited land area is the main explanation for what is identified as a deterioration in popular living standards, conjoined with a decline in both the quality of city life and the efficient functioning of the urban economy."[216]

The greater the scale of urbanization, the more number of migrants to the city, the more numerous the problems. "It follows that public energies should be devoted to lowering the natural rate of increase and immigration in Bombay's population, and encouraging or compelling outmigration, rather than improving existing conditions". Maps gave expression to this narrative of urbanization as overcrowding, the continual accumulation of people and things centered on the space of the city. The increasingly abstract grid of land uses, development controls, and policies for directing the location of housing, industry and commerce is reflected in the chronology and symbology of maps and plans from the 1840s to 1990s, as territorial depiction and verisimiltude gives way to symbolic classification and abstractions. The objectivity of the map evolved into the intentionality of the plan by assembling a vast array of

216 Nigel Harris, *Economic Development, Cities, and Planning : the Case of Bombay* (Bombay: Oxford University Press, 1978).

bureaucratic agencies charged with spatial planning – from the Municipality of the Island City and then Greater Bombay, to the regional boards and authorities later formed into the Bombay Metropolitan Region and its allied housing and policy units, to the enlarged Mumbai Metropolitan Region of today with its numerous constituent municipalities, towns and villages.

The Urban Turn

In a widely circulated essay published in 2002, historian Gyan Prakash posed the provocative question "what is at stake in the recent urban turn?" Noting the recent surge scholarly interest in and public attention to cities in India, he notes that while "urban scholarship and activism are not novel, what is new is the sharpened focus on *the city as society*". While in America and Europe, scholars, theorists and critics have turned to the city to explore the dilemmas of cultural identity, representation, and socio-technical change in relation to modernism and postmodernism, in India the recent urban turn can, according to Prakash, be traced to "two interlinked processes – the erosion of authority of the historicist narrative of Indian modernity, and the emergence of a new politics of urban space".[217]

The decline of the dominant narrative of the postcolonial state and its modernity, and its totalising claims, is nothing new in the historiography of modern India. More than

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2 1 7 Gyan Prakash, "The Urban Turn" in *SARAI Reader 2: Cities of Everyday Life*, Delhi: Centre for the Study of Developing Societies/Waag Society for Old and New Media, 2002

twenty years ago, Ranajit Guha founded the Subaltern Studies project in an effort to dismantle the elite frameworks of Indian historiography, and expose colonial and nationalist biases in the writing of Indian history[218]. Subaltern Studies had originated in a set of debates around the constitutive role of peasants, working classes, and previously silenced or marginalised groups in the formation of the Indian nation and the writing of its social and political history.

The first flowering of these insights, in the work of historians in the early volumes of *Subaltern Studies* yielded rich new research into subjects such as the history of communal riots, peasant and tribal revolts and insurgencies during the colonial period. The research of the early subaltern historians revealed the active resistance of marginalised groups in the making of the Indian nation, whose resistant consciousness and active historical agency in the formation of national and colonial politics had previously been assimilated to the role of their nationalist spokespersons, the machinations of the colonial state, or a master narrative of the coming-into-being of the Indian nation and the capture of state power by nationalist elites at Independence.

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2 1 8 Ranajit Guha, "On Some Aspects of the Historiography of Colonial India" in Guha, ed. *Subaltern Studies I: Writings on South Asian History & Society.* Delhi: Oxford University Press India, 1982 and "Dominance without Hegemony and its Historiography" in Guha, ed. *Subaltern Studies VI: Writings on South Asian History & Society.* Delhi: Oxford University Press India, 1989, pp.210–309.

Apart from the new critical orientation towards nationalism and colonialism as mutually supportive elite frameworks in the writing of Indian history, *Subaltern Studies* was also innovative in its techniques of reading and interpretation of official archives as well as non-official documents and materials such as popular religious and protest literature, diaries and personal memoirs, and documented sources of gossip, rumour, and non-literate expression by subaltern groups.

These methods of reading the official archive "against the grain" increasingly drew the attention of literary scholars, cultural critics and social theorists for whom fresh historical evidence of subaltern agency, and the resistance presence of marginalised groups, became a useful tool for decentering dominant nationalist, colonialist, and Orientalist discourses and offering new ways of reading old texts and archives as an exercise in discourse analysis and textual deconstruction.[219] It is in these two distinct moments of Subaltern Studies – in the recuperation of subaltern agency, and the deconstruction of the nationalist voice – that one can locate the academic urban turn in Indian historiography.

While in recent years the city in South Asia has stimulated widespread scholarly and civic interest in the practices grouped under the term "urbanism", the preoccupations of area studies research on South Asia with themes of nationalism, colonialism, and modernity provide an insufficient basis for understanding the role of Indian cities in a

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2 1 9 Gayatri Chakravorty Spivak, "Deconstructing Historiography" in Guha, ed. *Subaltern Studies IV: Writings on South Asian History & Society*, Delhi: Oxford University Press India, 1985

more global urban history. Scholarly and public interest in Indian cities is still quite recent. Public discourse on urbanization as a process in South Asia has been dramatized by crises in South Asia through the 1990s, framed by popular representations of urban growth in India inherited from postcolonial anti-urbanism. The media and alarmist elites in large Indian cities have filled the conceptual vacuum with their own discourses of exclusion. Recent urban crises whose causes remain diverse – from communal violence and religious extremism to ecological crises and infrastructure collapse – are assimilated into a meta-narrative whose outlines will be familiar to most of us. Population pressures and overcrowding combined with lack of infrastructure and demand on services combine into common-sense theory of urbanization a *narrative of overcrowding* with a horror of the multiplying scales of human population and capital accumulation.

When forced to confront rapid urbanization in recent decades, postcolonial state discourse in planning and administration have viewed the city as a set of problems, an ahistorical object of state intervention and control. Scholarship on South Asia has reflected this bias until quite recently. The dualist frameworks which structured most studies of colonial urbanism were based on narratives of "impact" and "response". Faithfully taken over by nationalist historiography, this approach emptied the space of the city of any narrative signficance. On the one hand, the nationalist biases of postwar and postcolonial social science and area studies deemed the rural countryside a more authentic form of society, following the well-known Gandhian

dictum about "the real India". On the other hand, the universalist biases of urban policy and technical studies in postcolonial India rendered the city into an ahistorical object of state intervention and control. While a social science of the city retained an ancillary role in development work sponsored by the state, now demoted to more instrumental forms of research, fact finding and data collection tied to the objectives of social work programmes, development plans, and state-sponsored policy research.

Urban research on South Asia has been plagued by a narrative hiatus between an increasing number of social and cultural histories of the "colonial city" and contemporary ethnographies of the "global city". Within area studies of South Asia, a peculiar gap has emerged between the work of social historians of the city and region in the eighteenth and nineteenth centuries, often with an interest in labour, gender, or environment; and cultural anthropologists working in the contemporary metropolis, with a perspective on the globalization of cultural and socio-economic forms. These gaps in the academic literature are similarly reflected in discourses and practices of urbanism in India, which retain a derivative and non-reflexive relationship to Western ideas of technology and the urban environment.

While sharing a common interest in the city, these disciplinary boundaries have conspired to introduce an unwarranted narrative and epistemological break when dealing with the postcolonial city. However twentieth century urbanization cannot be understood as solely a "colonial" nor a "national" phenomenon – or part of some generalized and generic global "modernity".

Sociologists have used the language of flows and networks to describe the scales of connectivity of global cities, and anthropologists and geographers have drawn our attention to the fragmented[220] and "splintered"[221] nature of urban space and how the abstract "space of flows" is always in tension with the "space of places"[222]. Similarly, historians of anti-colonial nationalism have argued that the "empty time" of the nation is punctuated and interrupted by subaltern resistance[223]. Recent urban histories of south Asia have challenged the dualism which structured earlier studies of colonial urbanism, showing that British power was often most insecure in its seats of command and control[224]. The colonial city was neither simply a physical container nor discursive stage, but a complex technological assemblage with often contradictory effects. The expansion of the city's external trade and the growth of factory industry fueled rapid urbanization in 1870-1930, rendering porous the boundaries between cantonments and native towns, factories and neighborhoods, as

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220 James Holston and Arjun Appadurai, eds., "Cities and Citizenship," *Public culture : bulletin of the Project for Transnational Cultural Studies.* 8, no. 2 (1996): 187.

221 Stephen Graham and Simon Marvin, *Splintering urbanism : networked infrastructures, technological mobilities and the urban condition* (New York: Routledge, 2001).

222 Manuel Castells, *The informational city : information technology, economic restructuring, and the urban-regional process* (Cambridge, Mass: Basil Blackwell, 1989).

223 Dipesh Chakrabarty, *Provincializing Europe : postcolonial thought and historical difference* (Princeton: Princeton University Press, 2000).

224 William Glover, *Making Lahore modern : constructing and imagining a colonial city* (Minneapolis: University of Minnesota Press, 2008); Swati Chattopadhyay, *Representing Calcutta : modernity, nationalism, and the colonial uncanny* (New York: Routledge, 2005).

both elites and masses appropriated the money, time and space of the colonial city[225]. Urban space and social life was the contested outcome of both colonial power and nationalist politics.

The urbanization of South Asia in the twentieth century transcends the narrative framework of postcolonial nationalism. The new urban ethnographies and histories of Bombay, Calcutta, Lahore, Delhi which have appeared in the past ten years have reversed this trend, examining the city as a stage for events or processes which unfold at various and disjunct scales, from the local and regional to the national and global. These studies, along with this one, bring South Asian cities squarely back on the research agenda, reversing the anti-urban biases of nationalism and postwar area studies, and allowing us to reimagine the connections between historical and contemporary globalisation both before and after the dominance of the nation-state .

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225 Prashant Kidambi, *The making of an Indian metropolis : colonial governance and public culture in Bombay, 1890-1920* (Burlington: Ashgate, 2007); Sandip Hazareesingh, *The colonial city and the challenge of modernity : urban hegemonies and civic contestations in Bombay City, 1900-1925* (Hyderabad India: Orient Longman, 2007).

Appendices

Calvin Smith on the Share Mania (1865)

Calvin W. Smith fought for the United States in the American Civil War, and was injured in 1864. After being released from service, he accepted a commission from the Tudor Ice Trading Company of Boston to become manager of their Ice House in Bombay, and later supervise the construction of their Calcutta Ice House. He sailed to India several months before the end of the Civil War, and the collapse of the share mania in cotton in Bombay which soon folllowed. His letters to his family in Grantville (today known as Wellesley Hills) are collected in the Massachusetts Historical Society.

Bombay, April 25th 1865

Dear friends at home,

Once more I will write to you; Although in my last I said that I would not but I cannot believe that is is your fault. I have not received a letter from anyone since I arrived here. I have now been here a month and a few days. I am still living and that is about all. At Colaba but hope to leave there this week or the first of next. I have got my rooms most done & I flatter myself that I have got as cool room as any in town

instead of painting them green as I started to do, I painted them a light salmon color which I like much better. I also have had some Venecian blinds made for the windows they are not yet up but in the course of human events will be. This is one of the many curses out here, every kind of work is done by natives and a slower set of morals I don't think could be found on the face of our little "farm".

Our business is very brisk just now, as this is the hot season, but the busy times don't bother me any as I have nothing to do with the sale of ice, only to see that it is sold, and balance the account in the morning of the sales of the day before. The vault that we keep the ice in is on the lower floor and the sale room in the second floor of the entrance to the salesroom is by winding stairs on the outside of the house. We open our vaults every morning and take out what we think will answer for the day's use and shut it up as soon as possible as that is the time that it melts. At the time that is opened Mr Field or myself has to be there, if not the natives would keep it opened as long as they could in order to get cooled off.

We have natives here that have been at work here for the last ten & twelve years and we have to watch them just as close now as we would a bird just let out of State prison. The natives don't think it any sin to steal, but the worst sin to get caught at it. One of the largest bazaars in the town is called the "Thieving Bazaar." If a person loses anything: the next morning he can buy it at the Bazaar if he wants it a great

deal cheaper than he can recover it by the law & and as like as not his own servant stole it.

I will try and give you some idea of the crowd that we have here for Ice. While I am writing now we have got two policemen at the door too only let a few in it a time. The crowd extends into the street and there is two or three policemen there to keep the street clear for the wagons &c. What would you think to see such a run of custom at "123"! We are in fears that our stock of Ice will run out before our next ship arrives.

The ship "Eagle Wing" is due here next month. If she arrives on time we shall be all right if not it will be the other way. Since commencing to write this your favor of the 24th Feb & March 9 has come to hand & I think with you, that you ink must be past redemption as it had faded so that it was almost impossible to read it. I made it out however I wish you would write more particulars about what folks are doing. What is Ms Bryant going to do in Baltimore and is there going to be anyone admitted at 123. Poor Mary I hope she may find her grub better in the future, but I guess she will manage to live through it, some way. You must give her my best wishes, and as ... only intend to write family letters home I shall expect all to write. This is an odd world I am in now, even the birds are so tame that they fly in at the windows and build their nest in our office and at one of our best Hotels the birds have their nests

behind all of the picture frames in the house. I was their to dinner one day and some of the birds came right on to the table for some crumbs; it is very pleasant to have them so tame. No one thinks of hunting them & a native Hindoo would not kill a bird crow or pigeon to save his life. I saw a funny sight this morning as I was coming to the Ice House. Some cooleys had caught a rat in a trap & had him in the street trying to kill him by punching him with a stick, and I counted 13 crows standing all around those men like chickens waiting to have him (rat).

I have not taken a ride in a palanquin yet. I don't like the style; the idea of riding on men's necks is too much for an American. Of the news from home this week rejoices the heart of every American in this place, but I am sorry to say such long faces I never saw on any set of mortals as the English & Parsees put on here. Our success at home is their *ruination*. Let that war end in one year, and there will be more failures in this town, than in any one place any where. Such wild speculation as has been going on here for the last four years, never was heard of before. The Mississippi & South Sea bubbles have gone, never to be heard from again. There is about 100 Land Reclamation Companies here whose shares at the cost price was $250. Three of those Co sold when I came here were at $2500 premium. The late news from home has knocked them down to $1200. Cotton Companies here whose shares of $1000 were at a premium of $50,000 when I came here are now at $2500. Let that war end and the Lord only tell where they will go to. India can never compete with America in

cotton. It cost her more to grow it, and after it is grown, the poorest cotton in the States is superior to it. The only hope that India cotton growers have is that we will not be able to produce cotton to any extent with free labor, as they say that the Negro as he is, is not superior as a man & laborer to these coolies, then I am much mistaken. Today we had a gang of 24 coolies to take ice out of the vault and it took them 9 hours to get 8 tons out, now I don't believe there is 24 negro's in the States as lazy as that. Since I wrote you last there has been a company of Negro minstrels in town they charged $3 admittance, big price and a grand affair, if they were at home they would play (if at all) to empty seats, here they had crowded houses every night. Poor devils I suppose they were like some others, could not get a living at home so came to India, to gull (?) some one out of one. I went one night and considered myself sold for $3 but as there is no loss without some gain, I found out what is considered a big thing out here.

Carson the manager is treated like a lion, big dinners are given him by the Parsees, he claims to be an American and hails from San Francisco. Only thing about him that is good, is that he is sound on the goosy (sp?) in regard to the War. Well I don't know what ... to write, unless I tell you about expenses which I find will be pretty large but my my pay will reach the extent I think. I had no idea that it cost as much to begin keeping house as I find it does, even on the "Old Bach" plan. What a lucky thing it is that I am not blessed with a "better half". If I was, I suppose she would think of many

things to buy, that I would never dream offf. "These women are a very expensive set" don't you girls at the Highland think so!

There is another man coming out here by name of Hayward Parker. If they keep on coming we will quite a company of Yanks after a while. I don't know what Mr Parker in tends to do guess he is on a "specs" (?). Mr Field received a letter from his father by the last mail, advicing him to clear himself from all cotton trade and speculation of all kinds and if I had arrived not to let me undertake any thing on my own account until I was used to the Country as he said he did not want my coming to India a loss to me for the want of good advice. I am very glad he takes such a fatherly interest in me, I shall try to keep that interest if possible.

The thermo. last week for three days stood 115 degrees in the shade, in this town but not in the Ice House, thank all that is good and great. Since I got my rooms painted I have been offered Rupees 100 per month rent for them. One half of that is all I now pay for board & rent at Colaba. But I thought my comfort was worth 50 rupees to me and the gent did not get them. Well how do the spirits perform now days, those that were to meet me in Bombay. I have not heard from yet is they have meet me, I am not aware of it. And about that ... truth how is it that my father should have an Uncle and no one knows any thing about it. It is strange to me. I believe that, if that Foster could guess better than that, there is very little spirits in it. It is true that Foster done some things that I can't account for, but he told me nothing but what I knew except

the Wm. Smith affair. I did not know any thing about that. I begin to think that no one else does.

Today witnesses another drop in Cotton & Shares. Last night we received a dispatch from London that Lee had been overtaken and whipped, losing his Genl and many prisoners. We had heard before of the capture of Richmond. Go in you Yankees, you have the best wishes of every American in this place and mine in particular. Give my love to all write soon.

Yours very Truly,

Calvin W. Smith

Ice House

Bombay, India

Public Petition against IST (1905)

The cover letter below and petition overleaf were submitted to Government of Bombay on 28 December 1905, days before Indian Standard Time (IST) was adopted throughout the entire subcontinent, except Bombay City. It was one of many petitions by Indian municipal councillors and community leaders in protest against the standardisation of time in the city. The organisers of the public meeting were Ahmedboy Habibhoy, Manmohandas Ramji, and Callianji Amurchand.

To: His Excellency The Right Honourable Sir Charles Wallace Alexander Napier Cochrane Baillie, Lord Lamington, G.C.M.G., G.C.I.E., Governor and President in Council, BOMBAY.

May it Please Your Excellency,

We the undersigned inhabitants of the city Bombay pray most humbly and respectfully that Your Excellency will kindly consider our petition against the adoption of Standard Time in our city, and we commend to your favourable consideration the following statement of our case.

The adoption of Standard Time in Bombay would be against the principles of modern science. For, since the time when clocks were manufactured in the 16th century, time in different parts of Europe and America was fixed according to the degrees of

longitude, in which the places were situated. In India, time was accordingly fixed for different places about 200 years ago or more, since when it is going on smoothly. Thus the Local Bombay Time was fixed to be 4 hours and 51 minutes, Madras Time 5 hours and 21 minutes and Calcutta Time 6 hours more than the Greenwich (London) Time. There is a difference of 4 minutes to every degree of longitude, every one of which to the East indicates 4 minutes more and to the West four less than the said Greenwich Time. Thus the arrangement of time is based upon the strictest principles of modern science and not upon the convenience of a microscopic minority of officials and a few hundred foreign visitors. Thus the adoption of a system of timing opposed entirely to the natural mean solar time is in the present age, a retrograde movement which should never be adopted unless there are most solid grounds and weighty reasons, adduced for such a step.

Your petitioners have not yet been made aware of the reason or reasons for the adoption of Standard Time, though it is nigh four months that the movement has been set on foot by Government. The principle object is to apparently to secure uniformity of time throughout India and to suit the convenience of travellers by railway. So far as travellers are concerned who merely pass through Bombay, no change in Local Time appears to be called for. Such travellers are mostly accustomed to adjusting their movements to the different times followed in different countries which they visit and the adoption of Standard Time for Bombay would not add appreciably to their greater convenience. In the absence of any reason we are not in a

position to examine and judge what may be the superior advantages to this proposed artificial time on the natural one still in vogue.

Bombay is justly called the "Urbs Prima in Indis" and is the capital of Commercial India. When Madras Time was adopted in several places of the Bombay and Madras Presidencies, particularly on Railways, in the year 1878, Bombay was excepted on certain grounds. If these grounds held good when Madras Time, which is 30 minutes in advance of Bombay Time was adopted, they will be much more applicable when Standard Time, which is 39 minutes more, is to be adopted. Besides as a matter of fact almost the entire population of Bombay has not known hitherto of any time except the one indicated by the sun, which by a consensus of scientific opinion is deemed to be the right and proper. It is superfluous to state that no person or body of institutions in Bombay have adopted any other than the Local Time for their respective daily purposes. If people in town have hitherto never been reconciled to even Madras Time, it is logically apparent that much less they could be made to reconcile themselves to this new fangled Standard Time.

The adoption of Standard Time in Bombay is highly prejudicial to the interests of religious communities. They offer prayers and perform religious ceremonies at particular times which indicate the positions of the sun in heaven. Thus for instance 12-30 p. m. is the time of the " Azan " of the second prayer of the Mohammedans [Muslims], which if Local Time be standardized would be 11-51 a. m., when the sun would never be overhead. Thus the adoption of Standard Time would cause a great

confusion and inconvenience among the Mohamedans. It would also interfere specially with certain daily religious rites, prayers and so forth which every Hindu, Mohamedan and Jew has to perform in consonance with his religious belief.

The adoption of Standard Time will cause great confusion in the Mercantile Offices, Banks, and Mills, because no clearly defined scheme has been propounded as to the hours of business to be observed. The custom is almost universal of beginning business in Mercantile Circles and Banks at 10 a.m. Should these hours be adhered to notwithstanding the adoption of Standard Time, there would be much hardship inflicted on all subordinates, especially during winter months when the period between sunrise and business hours would be curtailed by 39 minutes, and thus all ordinary domestic arrangements of our daily household based on solar time for centuries past, would be upset. Should, however, the opening hour of business be altered to 10-30 or 10-45 a.m., the tendency would sooner or later be to revert to the universal hour of 10 o'clock, so great is the force of ancient custom in such matters. The inconvenience, confusion and hardship caused by the adoption of Standard Time, during winter months, would be still intensified in the case of those who come down from the suburbs of such places as Bandora, Coorla, Thana, Kalian, etc. who when leaving will look at clocks. Thus, when days are short, the sun goes down at 5-21 p.m., which would be 6 p.m., by Standard Time. When days are long, the large subordinate agency, without whom the city's business cannot be satisfactorily carried on, would clamour for the late time and thus work will be delayed and masters will

suffer. Such confusion would be very serious, especially in Mills and Factories where employees can make strikes. The result will be that confusion and loss would be the sure upshot if Standard Time be adopted in Bombay, where there are more Offices, Mills and other working concerns than in any other single place in India. Besides we respectfully beg to inquire where lies the advantage of adoption, though on the other hand, it is certain that, if adopted, it would disadvantage both employers and employees, and all others seriously in more ways than one.

A uniform time if fixed for the whole of India must result in certain parts of the country having a time largely at variance with Local Time and must lead to considerable inconvenience and confusion to the population at large in such parts; and there appears to be no real grounds for the proposal. It is probably necessary that the Railways should have one uniform time and they have got it. But it cannot be that what is good on Railways is good for the population at large. There is not an iota of evidence yet advanced before the public that there has at any time demand from millions of the vast population of the country that Standard Time was essential or requisite. If then there be no popular demand for a change, and if the change itself is accompanied by no advantage, where we respectfully beg to inquire, may be the utility of forcing it. For the several reasons and objections stated, your petitioners most respectfully trust that your Excellency in Council will be so good as to communicate to the Government of India the views we entertain, so that the proposed innovation may be wholly abandoned so far as our own city is concerned.

Bombay, 22nd December 1905

Scheme III, Case 282, Haji Mohamed Abba (1899-1905)

Examined by Byrne:

The property in this case between 2 tramway lines and is 100 yards [for] Bhendy Bazar and a little over 200 s.y. from Duncan Road. The claimant carries on the business of a hide merchant and intends to claim compensation for changing his place of business and residence. The present place is particularly suitable for carrying on the hide trade in which the claimant is engaged, as hides are sold in this locality for retail and wholesale. Claimant will find it difficult to obtain suitable accomodation elsewhere for carrying on his business. In this property there are no hide godowns.

I am the Mehta of the claimant. I produce extracts from the ledger and cash book of the claimants. These extracts were made at the instance of the Imp. Trust. Inspection was given of the original books to the Trust. They were shown to Mr Bharucha and his Mehta. They were satisfied with the figures of cost of B. These extracts show 46148-12-0 for the new house besides Rs 23900 paid for the site of the house. I have taken the extracts myself. I am the head Mehta of the claimant and was in his service when the new house was built. I used to make entries myself in the books of the

expenditure on the house from time to time. Some entries might have been made by another Mehta but I would check such entries.

X-nd by Brown. There is a deed to show that Rs 23,900 were paid for the land of the new house including vacant land within the rear which has not been built upon.

Byrne says Exhibit K & H make up 23,900 including Rs 300 expenses.

Adjourned to 30 October 1903. J.B. Framjee

Brown states Smetham Byrne & Noble write that negotiations pending, adjourned Nov 03, Jan 04

Negotiations fallen through, trust valuation not ready, adjourned feb 04

Adjourned March 04 as trust valuation only just prepared

Repeated postponements until June 1904

28 June 1904 (Cardale and Smetham)

Govind Raja to Smetham: I have a shop in the house of Beg Mohammed which is opposite to plots D & E. I deal in hides and leather goods. The name of my firm Jairam Govind & Co. I have been carrying on the business for the last 35 years in this very shop. We have rented the whole for which we pay Rs 425 per month. Till 8 months ago the rent was Rs 325 then then rent was increased we had to submit as could not very well give up the central position as regards our trade. Most of the shops in Dhabu Street are for leather goods and hides. It's difficult to obtain suitable accomodation in the street for the purposes of our trade. The value of our stock is 2 lakhs in the shop and at the factory of Dharavi.

I know that the vacant plots D & E opposite to our shop which belong to Haji Mahomed Abba. About 2 or three years ago, may be more, I offered to buy the place/plot [?] exactly opposite to our shop. I had made the offer before the new house in this case was built. I offered Rs 15,000 for the vacant field/piece, but I did not know what the area was. Haji Mahomed Abba refused my offer. I then made another proposal which was that if he would build on this vacant land I would rent the place from him. I asked him to build a ground floor & 2 upper floors, for which he asked Rs 250 and I offered Rs 225 per month. I am still prepared to pay this amount. I am also prepared to buy the vacant land at Rs 60 per square yard. I do anticipate that if I remove my place of business elsewhere I should suffer loss in my earnings. Within my own knowledge Haji Ahmed Abba has had his place of business in Bala

Street for the last 40 years. If Haji Ahmed Abba had to remove elsewhere he would also suffer loss. He does a very large trade in leather.

X-ned by Cardale.

If I had built upon the vacant land piece I should still have retained my present place, as I want more space. I am not sure, but I have been paying rent to Beg Mahomed for about 8 months. I know roughly that Beg Mahomed paid about Rs 45,00 at an auction sale. My bid was Rs 40,000. I did not make a higher bid as a thought passed through my mind that there was a possibility of Government requiring the property along with others in this street. If Government acquire plots D & E I am ready to buy from them at 60 Rs per square yard. When I made the offer to Haji Mahomed Abba, it was not in writing. I did make an offer, but I am am not quite certain whether at any time. I sent him a written communication about it. I don't remember exactly whether any writing passed between us regarding the lease of the house proposed to be built on the vacant land. At this distance of time it is difficult to remember exactly whether there was any writing or not. I did not consult an Engineer before making the offer of Rs 15,000. My idea of the land then was that it was 60 Rs per square yard. My idea is the same now, and I am willing to buy at that price, whomever may be the owner I know the locality. I know the high rent we pay and so I fixed upon Rs 60 per square yard as a fair value of the land. I did not try to purchase the property next to the Null Bazar mosque fronting Erskine Road and near

its junction with Dhabu Street. Except a small house whihch I bought for my son in Parsi Mohala near about here, I have made no endeavour to make any other purchases besides those mentioned by me.

Re-examined by Smetham:

Except one property in line with Haji Abba's vacant land, and the vacant land itself, I do not know that there was any other land for sale in Dhabu Street. Had there been any other suitable property for sale in Dhabu Street I would have been prepared to buy it.

Haji Mahomed Abba states to Smetham:

I am a large exporter of hides and skins. I export Rs 15 to 20 lakhs worth every year. Most part to London - my place of business and residence are in this house. My place of business is in the new house. This property originally belonged to my father. I am his only son and when he died he left his widow Aminabai and myself as his sole heirs.

I occupy the bunglee of the corner house and I have my Bhaiya in a room on the ground floor of the same house. I estimate the bunglee at Rs 15 and the Bhaiya's

room at Rs 5 for him per month. The tenants in this corner are more less related to us and threfore they pay less than the market rate. I bought B, D & E were bought in 1891. There were dilapidated buildings on these plots when I bought. In 1897 the Municipality served me with a notice and had the structures pilled down. For Plot C the bargain was made in 1897 but it was not until 1898 that the conveyance was executed. I paid Rs 6900 [?] for that. There was a building on it which was also p-- [?] by me in consequence of Municipal notice. In 1898 I commenced my new house on Plots B & C. I built it for my residence and for my Pedhi on the ground floor and I am so using it. I woul dhave only spent Rs 25,000 on the house if I had meant to let it. I actually spent Rs 46,148-12-00. Mukund Patkar was my Engineer. Labour was by contract. I supplied the materials and the construction was supervised by my Engineer. I also intended to build upon the vacant plots D & E. The foundations are there already. Even Porebunder arches had been erected but I had to take them down on the occassion of a wedding.

I desisted from building as in consequence of the Trust notice my Solicitor advised me not to to go with the proposed building. When I had received the notice my new house had been almost completed. There was some work remaining which I stopped at the time and I applied for permission on D & E. Which was not granted. Jairam Govind & others offered to buy plots D & E before I built my new house. Jairam offered Rs 15,000. I refused as I did not want to sell. I don't know the exact area in square yards, but the land is 40' 6" in width, 52 feet in depth. Almost all the shops in

Dhabu Street are for the sale of hides and skins, i.e. from Erskine Road up to the Masjid. My idea of land here is 50 to 80 Rs per square yard. According to the nature of the land I would pay up to Rs 80 if I wanted to buy. When I refused to sell outright to Jairam Govind, he asked me to build a building of three floors including ground floor. Which I agreed to do if he gave a rent of Rs 250 per month. He offered Rs 225 so nothing came out of it. I was born in the corner house and my Pedhi was in the house until it was removed to the new house. My father had his Pedhi also in the corner house. If I had to move my Pedhi elsewhere it would injuriously affect my business. I have shown Mr Bharucha my accounts to show what the new house has cost. I gave him a copy of the account which aggregates Rs 46,148-12-00.

Adjourned to 25 July 1904 at 3 o'clock

Trust requests postponement, adjourned to 29 Aug 1904 at 3 o clock.

29 August 1904

Cardale

Smetham

Setham puts in [??] Claim for loss of profit Rs 15,000

Haji Mohamed Abba X-mined by Cardale –

My rade is in hides and skins. Adamji Peerbhai is the largest dealer in the trade. Adamji Peerbhai's factory is at Dharavi. But his Pedhi is at his office near the Babula Tank. My factory is also at Dharavi. My Pedhi is in my new house in Balu Street. In Balu Street no other ealer in hides and skins has his Pedhi. I deal in hides and skins, nothing else. I invest my monies in landed property. I am satisfied with a net return of 5% on my investments in house property. I don't always get as much as 5%.

I have a large estate at Dharavi. Besides the property in the case, I had a hpouse in China Butcher Street which has been required by the Trust. I bought it nine years ago at an auction for Rs 11,100. I used to get Rs 77 for the rent for H.M. I have also a property in Sheikh Memon Street. I bought it 15 years ago for Rs 36,000. I get Rs 200 in rent for H.M. Sh. No [??] is 45. I also own a house in Banyan Road which I bought 10 years ago for Rs 22,000 or 23,000.Rs Rent Rs 155 for H.M. I also purchased recently the Visram Markets in Parel for Rs 1,65,000. If fully occupied the rental would be Rs 2100 or 2200 Rs.

If the bargain is made at the Pehdi, the goods are packed at Dharavi and taken straight to the docks for export. The three Erskine Road shops in the property in this case are occupied by two native account book-sellers, and a barber. One shop in Balu Street is an eating house. The other is a glass shop.

The largest business in hides is done in Dhabu Street. There is some retail trade done in Kazipoora near the Two Tanks. Govind Raja's shop at present is near [??] on Erskine Road. If I can secure a suitable place in Erskine Road, I could have my Pedhi there. My name is known to the butchers who come to sell but there are a great many illiterate dealers who come to deal with me. These men, not finding me in my established place may go elsewhere and not come to me in my new place. My trade is an export one but for that trade I have to buy from butchers who come from up-country. I applied to the Trust to be allowed to retain a portion of the property to be acquired in order that I may carry on the business of my pedhi there, but my request was not granted. I have not tried to secure any other place. What I want is a place quite close to my present Pedhi, and as soon as I can get such a place I will endeavour to secure it at any cost.

In my Erskine Road house there are six tenants on the ground floor, 6 tenants on the first floor, same number of tenants on the second floor and # of tenants on the 3rd floor. In my new house there are 6 tenants on the ground floor, 10 tenants on the first & ten tenants on the second floor. This makes 51 tenants for the two houses. The tenants of the ground floor in the Erskine Road house are outsiders. The tenants of the upper floors are all my relatives.

When my father died, only Mother and myself were his only heirs. There has been no incrwase of rent within the last 32 years as regards the upper floors. Within this period there has been only two or three changes. The ground floor rents have been

slightly increased. If my books show frequent changes this is due to fact that when a relative dies, the room is entered in his widow's or his son's name, but the new name is always some relative of the last occupant. There might have been vacancies in the Balu Street house, but none in the Erskine Road house. Vacanacies and bad debts might be as much as 15% in respect of the Balu Street house but I feel explain [sic] that there can be no vacancies in the Erskine Road. In Balu street house there are only 8 or 9 tenants who are my relatives. The cause of 15% vacancy in this house is because we sometimes have to turn out tenants if we find their habits are dirty.

There is vacant land at the back of my Balu Street house. If this vacant is built over/on [?], it might make some difference but care not p??] entirely shut off the westerly breeze from my Balu street house as 8 feet space will be left between the two buildings, and there all will two [??] gutters on either side. If the vacant land belonged to any one else, and if he had built on the whole site my house would no doubt have suffered by his [??] building on the vacant land there is a shed at present which is used by me as a godown and a stable. I have a shop there which is also mine in which hides and skins are sold.

In my further claim put in today I claim besides Rs 15,000 for loss of earnings Rs 225 for month from 1st August 1899 for the vacant land not built upon. This is the land which I purchased in 1891. There was a building on the land when I bought. There is one upper storeyed building where I bought which I fetched Rs 80 per month. As the Municipality gave me notice to pull down the house, I did so. It was in January 1898

that I pulled down the house. I then had plans prepared for building I proposed to erect on the vacant land. Mr Bhedwar was my Engineer. I claim Rs 225 a month from 1 August 1899 as I allow 6 months for the building from the date of the notice for the Trust viz 1st January 1899. I had commenced to build when I received the notice. It was in consequence of the notice that I stopped building further.

Adjourned to 20th September 1904 at 11-15 o'clock.

J.D. Framjee