Society and Circulation
Mobile People and Itinerant Cultures in South Asia 1750–1950

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CHAPTER I
Introduction
Circulation and Society under
Colonial Rule

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The dervish only wonders
to obtain a vision.
Otherwise, there's bread aplenty
and salt anywhere. — Seventeenth-century Deccani Sufi couplet

For a good part of the twentieth century, writers of a diversity of
persuasions have attempted to argue that India was and is the sum
of its hundreds of thousands of villages, and its somewhat smaller
number of towns, that is, a totality that could be defined as the aggre-
gate of a dispersion of fixed spots on a map. This was not only the
stock-in-trade of tourist brochures selling the idea of an 'eternal India'
still to be found in its villages, but also of the anthropological conceit
that the village was the microcosm of all of Indian society and thus
the logical terrain of investigation to enter into the seamless whole.
Who created this view? Answers are diverse, and no conspiracy theory
is likely to yield very satisfactory results. But one of the most powerful
proponents of this view was undoubtedly the most celebrated Indian
of the twentieth century, Mohandas Karamchand Gandhi, who gave
a magical new lease of life to the notion of the 'village republic' that

1 Simon Digby, Sufis and Soldiers in Aswangsab's Deccan: Meftslates-i Naqsh-
hudfyya (Delhi, 2003), p.137. The translation has been mildly altered.
had come into existence in the middle years of the nineteenth century through the pens of Henry Maine and Karl Marx. This was no small irony for some of the most iconic scenes of Gandhi’s own life were linked to circulation. This is true at the broadest level, as a man from western India who was partly educated in Europe, and then affirmed himself as a lawyer by a characteristic act of Gujarati expatriation to South Africa. But it is also the case that Gandhi is somehow intrinsically linked to the railway train, from the celebrated incident of his expulsion from a first-class railway carriage in South Africa, to his constant movements within India during the years of the national movement, nearly always by rail. Arguably, more Indians must have seen Gandhi in a railway station than in any other physical forum—and yet he spoke of fixity as some sort of Indian idyll. Not the least of the ironies was the fact that he gave the name Ram Rajya to this idyll, referring to a ruler who spent a good part of his life wandering in exile, rather than ensconced in his capital city. If Indian civilization must be defined in terms of its greatest epics, as classical Indologists have so often insisted, we must surely make something of the fact that both the Ramayana and the Mahabharata centre in large measure on the relationship between fixity and circulation, between the life of the wanderer and that of the sedentary prince.

Thus, while ‘circulation’ may at first appear a strange topic to choose for a collection of historical essays on India, the choice, as the above examples suggest, is not without its reasons. The history of circulation, in an Indian context, will evince for many the kind of careful, detailed studies of modes and means of transport which have made the reputation of a historian like Jean Deloche. In this volume, circulation will however refer to more than the movement to and fro of men and goods between one part of the subcontinent and another. Apart from men and goods, many other items circulate in a society (and between a given society and other societies): information, knowledge, ideas, techniques, skills, cultural productions (texts, songs), religious practices, even gods. Circulation is different from simple mobility,

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2 Jean Deloche, La circulation en Inde avant la révolution des transports: Tome I, Le voie de terre; Tome II, Le voie d’eau (Paris, 1980), along with a host of other publications by the same author. The English translation of this work is published as Jean Deloche, Transports and Communications in India prior to Steam Locomotion: Vol. I, Land Transport; Vol. II, Water Transport (Delhi, 1993).


of India was still that of a fairly immobile and unchanging agrarian society in the longue durée, in which some movement had been suddenly introduced by the colonial intrusion, but not so as to profoundly disturb the calm of an ageless social order. If historians of a Whiggish hue were prone to enthuse about the changes, albeit limited, brought about by the contact with the supposedly more advanced and more ‘democratic’ West, Indian nationalist historians, including those of a Marxist persuasion, deplored them as largely disruptive, but even the former did not go as far as to claim that this intervention had changed the basic parameters of Indian society, the age-old certainties of village and caste. There was a kind of consensus that the pattern of the Indian past was not to be understood mainly in terms of flows, but rather of fairly enduring structures undergoing limited changes over time.³

So long as the dominant paradigm in the historiography of South Asia was that of a fairly stable, even unchanging society, ordered around civilizational and cultural constants, firmly anchored in well-defined localities and communities, spatial and social mobility were necessarily deemed to be limited.⁴ Although certain patterns of circulation were mapped, and long-term regularities underlined, with a distinction between a North Indian and a South Indian ecumene necessarily deemed to be limited,⁵ although certain patterns of circulation were mapped, and long-term regularities underlined, with a distinction between a North Indian and a South Indian ecumene necessarily deemed to be limited, there was a kind of general model of circulation in seventeenth- and eighteenth-century South Asia, which was focused on North India: he saw it as oriented around a loose quadrilateral structure, formed by the two coasts leading up respectively to Gujarat and Sind, and Bengal, and by two land routes, one defined by the Ganges river system and its

³ For a comparison with the relatively ‘classic’ view of China, see Mark Elvin, The Pattern of the Chinese Past (Stanford, 1973), which may be contrasted in turn to revised views stressing mobility and circulation, first in Susan Naquin and Evelyn S. Rawski, Chinese Society in the Eighteenth Century (New Haven, 1987).

⁴ See, in this context, David Ludden, ‘History outside Civilization and the


⁶ On this issue, see for instance Lalokshmi Subramanian, Indigenous Capital and Imperial Expansion: Banga, Sivakasi and the West Coast (Delhi, 1996).

⁷ Dharma Kumar, Land and Caste in South India: Agricultural Labour in the Madras Presidency during the Nineteenth Century (Cambridge, 1965).
pointing to the existence of widespread forms of circulation in pre-colonial India, colonialism was still widely credited with having brought in some movement into a rigid structure. But, somewhat paradoxically, the most obvious and massive colonial innovations, such as the recruitment of a large mobile workforce for plantations in India and abroad, or the emergence of an industrial labour force for the textile mills, were seen as having had only a limited 'impact' on the wider society and economy, which were supposed to have remained relatively unaffected. And yet all agreed that the existing pattern of circulation as outlined by Ashim Das Gupta had been profoundly subverted by the arrival, in the second half of the nineteenth century, of the permanent highway and rail system, with long-lasting effects on both port-cities and their hinterlands. There was thus widespread agreement that the advent of colonialism had largely coincided with a general reorganisation of existing patterns of circulation, but the meaning ascribed to this development was ambiguous.

In the last three decades, the historiographical landscape has changed profoundly. Three different interventions have taken place, which have had an impact on the way historians have looked at processes of circulation in India. One field of study which benefited from increased attention was the long-distance circulation of men, capital and goods. With the coming to South Asia of world-systems theory in the 1980s, all that pertained to the study of the linkages between the Indian economy and the so-called world capitalist economy was given greater importance. More or less at the same time, although largely unrelated to this development, the new discipline of diaspora studies, benefiting from the sudden rise of a significant South Asian academic diaspora active in US and British universities, expanded spectacularly, emphasising the major role played by India as a source of labour, capital and expertise for the British Empire and the world at large since the nineteenth century. However, as Eric Meyer's essay in this volume shows convincingly, too much emphasis was put on the radically 'new' character of the colonial era migrations of labourers, be they through the khangani system or indentured, when

in fact the latter often used preexisting channels of circulation. Besides diaspora studies often missed the many articulations which linked the domestic labour market with outside markets, and tended to overemphasise the divide between 'internal' and 'external' circulations.

A second type of intervention drew more specific attention to one major consequence which the advent of colonialism had on patterns of circulation, namely the way in which nomadic frontiers were affected by the process of 'peasantisation', which, as shown, amongst other historians, by C.A. Bayly, went hand in hand with the demilitarisation of society. Colonial rule, it was frequently argued now, resulted in the rejection of large nomadic or semi-nomadic groups to the fringes of the social order. The reordering of society that British rule attempted through the regulation and outward repress of certain forms of circulation could be interpreted in a Foucauldian mode, as part of a 'disciplinary' project. An attempt to extend this view is found in Arunabha Ghosh's essay in this volume. Commonalities can thus be shown to exist between some of the historiographical developments of the 1980s and the emerging postmodernist trend which evolved in the 1990s from within the so-called 'subaltern' school of historians. These anti-whig, postmodern critiques of the Enlightenment and of its 'totalitarian' project have argued that the colonial intervention completely remodelled Indian society, not so much in its actual socio-economic structures as in its very modes of thinking. Western domination has been equated in this view with an 'imperialism of categories' imposing new rigidities on a pre-colonial world which was characterised, rather than by strict adherence to a pre-ordained hierarchy, by a large degree of 'fuzziness'. Postmodernist historians of South Asia, who have largely abandoned the field of economic and social history, have on the whole paid little attention to actual processes of circulation. They have been mostly interested in studying knowledge processes, and their model of the circulation of

11 C.A. Bayly, Riders, Townsmen and Bazaar: North Indian Society in the Age of British Expansion, 1770–1870 (Cambridge, 1983); some aspects of the thesis are pursued further in Sumit Kaviraj, The Capital and the Company: Tradition and Transition in Northern India, 1770–1839 (Delhi, 1995).
knowledge between the West and India has been decidedly diffusionist. They have seen ‘Western knowledge’ as being imposed on a different epistemic universe, and have largely been blind to the strong evidence of the existence of a constant circulation of ideas, practices and personnel between India and the ‘West’, to which Kapil Raj’s essay here draws attention.

From a rapid examination of these three strands of historical discourse, one could gather the impression that a kind of argument, which remained mostly implicit, was being built around the existence of a decisive change in the ‘circularity regime’ linked to the advent of colonialism. Colonialism, far from being associated, as the wisdom of an earlier historiographical moment was prone to claim, with a greater freedom to circulate, and greater possibilities, linked to the advent of the railways, on the contrary would have been characterised by the advent of a new regime of surveillance which would have made circulation in fact more difficult and controlled. A caveat in regard to this view is however thrown in by Bayly in a recent (but consulted) work, where he has suggested that surveillance of circulation was practised on a large scale by most of the later pre-colonial polities, which had at their service vast networks of spies and informers. What is clear nevertheless is that the colonial regime had a normative view of circulation which was more articulate than that of the regimes which preceded it. The kind of circulation linked to nomadism or semi-nomadism in their various forms was looked upon by colonial rulers as potentially subversive and to be limited as much as possible, if not altogether suppressed. The emergence, in the early nineteenth century, of the myth of the ‘Thugs’ reflected the negative colonial view of circulation as a source of danger to public order. It took many decades of Pax Britannica to see the roads endowed, in colonial discourse, with a certain positive quality, as in Kipling’s Kim, rather than being the locus par excellence of danger and violence. Whether this topos of the road as a place of danger was a merely British construct.

In examining various forms of circulation, broadly during the colonial period, this work seeks to uncover some basic truths about the dynamics of Indian society. These dynamics were largely derived from the existence, in the langue duree, of a pattern of interaction between different ecosystems and the different societal formations and economies they sustained over time. Burton Stein’s work on South India has made us familiar with the dynamics of the interaction between three different ecological zones supporting different social and economic patterns: ‘dry zones’ sustaining a largely pastoral economy, areas of sufficient moisture with their dominantly agricultural economies based on rice-growing, and ‘semi-dry’ intermediate areas, where agriculture was based on irrigation. While the first two were characterised by highly routinised productive processes, the third provided scope for a mobile and skilful peasantry and groups of merchants and artisans who enjoyed relatively high status. The third type was the most dynamic, and provided the other two with a constant flow of skilled specialists. *Motasti manadas* and taking into account climatic and soil differences, a simplified form of this South Indian pattern, based on the opposition between dry zones on the one hand and zones of riverine agriculture on the other hand, is probably susceptible of some degree of generalisation to the subcontinent as a whole, including the ‘dry zone’ of Afghanistan, Iran and Central Asia, whose history has been so intimately connected with that of India, as Jos Gommans’s work has shown. More specifically, in the North Indian context, this interaction was manifested through a regular pattern of circulation of manpower, including military manpower, goods, capital, expertise, ideas, techniques, etc., from the ‘dry’ areas to the ‘wet’ zones, which needs detailed exploration (these issues are addressed in Claude Markovits’s contribution to this volume). In Western India, an analysis of circulation cannot avoid taking into account the Indian Ocean world and the various links the coastal regions of the subcontinent forged with it.

This volume examines some of the various forms of circulation which linked different regions of the Indian ecumene in a broad sense (including Sri Lanka) and which tended to produce dynamic interaction. It does not deal for the most part with circulations between India and other regions of the world, such as Southeast Asia, Tibet or Central Asia. It does not limit itself to looking at forms of ‘high circulation’ but also examines more mundane circuits, like those of pilgrimage linking the western Deccan to the great temple of Tirupati (referred to in the essay by Narayana Rao and Subrahmanyan)14 or those connecting petty political and courtly centers, where musicians, artisans and service people moved in search of patrons and employment (studied here by Catherine Servan-Schreiber).

‘Circulation’ therefore, in this volume, is also meant as a kind of shorthand for the capacity of Indian society over the centuries to generate change. The argument made here is not meant to be ‘isolationist’: change in the subcontinent was often connected with the circulation of models and practices which had their origins in the Middle East, Central Asia or, increasingly, Europe. But these models and practices were always reworked locally and cannot be analysed solely in terms of a response to external stimuli. Although the basic argument applies to India in the long term, from at least the twelfth century, the evidence examined in the various essays pertains almost exclusively to the period starting in the eighteenth century, and coinciding with the establishment of British supremacy. While the points of view of the various authors regarding the nature of the colonial encounter vary, none of them takes the view that the advent of colonialism completely modified the conditions of circulation in the subcontinent. Five of the papers, those by Narayana Rao and Subrahmanyan, Servan-Schreiber, Meyer, Markovits and Bhattacharya, tend to underline certain continuities in modes of circulation between


The colonial and post-colonial periods, which are characterized by periods of transition and change, are marked by a complex interplay of political, economic, and cultural forces. This interplay is evident in the exchanged views and experiences of the colonizer and the colonized, as well as in the resistance and adaptation of the colonized to the demands of colonial power. The post-colonial period, in particular, is characterized by a search for identity and a desire to break free from the legacy of colonialism. This search is reflected in the literature of the period, which often explores themes of identity, resistance, and the legacy of colonialism.

In this context, the role of literature in shaping society and culture is crucial. Literature serves as a means of expression and communication, allowing individuals and communities to articulate their experiences and perspectives. It is through literature that the legacies of colonialism are negotiated and reimagined, and new narratives of resistance and identity are created. The post-colonial period is thus marked by a rich literary production that reflects the complex and multifaceted nature of the colonial experience.
the circulation of knowledge worked out by Raj is based on a notion of asymmetric reciprocity, which could be generalized to other fields. Raj gives local informants and specialists an important role in the construction of cartographical knowledge, which he sees as a joint Indo-British venture, but he is attentive to the actual relationships of power which existed between Britons and Indians, who, though working with each other, were not in a relationship of equality.

To speak of circulation without addressing the central issue of the movement of working men and women in search of work would be well-nigh impossible. In the Indian case, as we have noted above, the issues of labour migration from the rural to the urban areas linked to industrialisation, as well as of overseas migration in the context of indenture, have long been staples of the economic history literature. Yet, certain aspects of even these questions remain significantly underexplored. The next two essays therefore explore some aspects of the long-range dimensions of labour circulation from India during colonial times. While Meyer’s essay emphasises certain long-term continuities in patterns of labour circulation between South India and the neighbouring island of Ceylon (Sri Lanka), Balachandran’s deals with a completely new current, the mass recruitment of maritime labour from India for the British merchant fleet.

Starting with a broad survey of the variated forms of circulation of men and goods which have historically linked the Kerala and Tamil Nadu coastal regions from the early medieval period with the island of Ceylon, Meyer demonstrates that the Palk Straits and the Gulf of Mannar witnessed relatively intensive processes of such circulation already in the late pre-colonial centuries. He then goes on to show the existence of some significant continuities with the massive colonial-era recruitment of Indian coolies for the new coffee and tea plantations of the island in the nineteenth century. The so-called kangan system was already partly in operation before 1830, but it took on a new dimension as it became interlinked with Chettiyar attempts at establishing a credit network linking the island with India. Meyer then moves on to consider briefly the political dimension, as the control of circulatory flows from India became a central plank of...

25 On this subject, also see the detailed monographic study by Jorge Manuel Flores, Os Portugueses e o Mar do Ceife: Trinta, Diplomacia e Guerra (1498–1563) (Lisboa, 1998).

26 Jack Goody, The East in the West (Cambridge, 1996), especially chs 3 and 4, for a bold if unsustained view; and Dreyfus Lombard and Jean Aubin (eds), Asian
concerned with smaller-scale mobilities—those of itinerant traders in Punjab and the Northwest Frontiers.

In his essay on pan-Indian merchant networks, Markovits attempts to elucidate the phenomenon of the dominance of a few networks originating from the Northwest of the subcontinent over much of trade and finance at an all-India level. He puts forward an "ecological" argument about a large-scale transfer of mercantile capital and skills in the "dry zone" between the 'dry zones' of the Northwest (Punjab, Sind, Rajasthan, Gujarat) and areas of riverine agriculture in the Ganges area and the Deccan. Looking at some of the comparative advantages, mainly in terms of information and knowledge about markets, that the merchant networks of this area acquired over the centuries, he then charts the course of their expansion from the sixteenth century, with particular emphasis on the massive Marwari migration of the nineteenth and early-twentieth centuries. In spite of the large-scale displacement of men which took place, these networks continued to maintain a fluid pattern of circulation, as they kept close links with their areas of origin, from where they were constantly replenished with men to staff their firms and shops.

While Markovits offers a broad survey, Bhattacharya gives a much more detailed empirical study of petty itinerant traders in Punjab during the colonial period. In the first part of his essay, he weaves a rich tapestry of various types of peddlers, some operating within a limited region, like the Sialkot Khohas who procured their goods from Delhi and sold them across the Punjab; others with a longer range, like the Punjab traders who crossed the high Himalayan passes to reach the Yarkand area of Chinese Sinkiang; or the Powindas, Afghan traders who manned the caravans linking Central Asia with Northern India through Afghanistan.22 In the second part, he looks at representations, particularly those that settled populations formed of these 'peripatetics' as well as their own self-image as projected in their myths. Their negative image in the dominant discourse of the settled populations was also possibly reflected in the attempts of the colonial regime at controlling and repressing them, in particular the female peripatetics who were assimilated to prostitutes. The essay thus offers a transition with Saul's study of the police in Punjab, which opens the following section.

The next two essays deal with the attitude of the colonial state towards circulation. While Saul's text looks at territorial control in Punjab through a detailed study of the role of the police in this, the last province to be annexed to the British-Indian empire, Pouche-padatz's essay addresses the circulatory nature of the colonial state itself through an analysis of one of its major representations, the tour of the district officer.

Saul is mostly interested in the question of governability or 'governmentality' in the Foucauldian sense, which he sees through the prism of the relationship between the police—that everyday arm of the state—and nomadic groups. Though his interest is informed by the more general Foucauldian argument that it is at the interface between the apparatus of state surveillance and those groups of society which are on the margin that the true nature of the state reveals itself, he produces an analysis of the colonial state's attempts at controlling circulation which directly addresses the major preoccupations of this volume. Looking firstly at the history of the constitution of a colonial police in Punjab and secondly at the legal framework in which it operated, he then gives us a detailed account of the surveillance network established by the colonial state in the province to control the 'wandering tribes' which, on account of their peripatetic way of life, were supposed to present a direct menace to the evolving colonial order. Large-scale settlement of these populations was achieved, but at a high cost to their own dignity as well as to the legitimacy of the state itself, as victims of this policy employed the language of individual rights against the collective reification to which they had been subjected.23


23 This view may be contrasted with Sandra Ferrign, 'Santisolo and the State: The Changing Nature of "Crime" and "Justice" in Nineteenth-century British India', in Michael Anderson and Sumit Goh (eds.), Changing Concepts of Rights and Justice in South Asia (Delhi, 1998), pp. 82-113.
Eventually the disciplinary project of the state had to enter into a negotiation with indigenous notions of freedom of circulation, and the final outcome was far from responding to the normative views of the rulers.

Pouthropadian’s study takes us into the heart of the colonial state itself, not so much in its dimension as an intellectual project as in its instrumentality. He focuses on a well-known characteristic of the colonial regime, at least prior to 1914, namely the enormous amount of circulating that its servants did. Apart from the ritual hot-weather movement of the colonial government itself from Calcutta to Simla, which would perhaps repay detailed study, its principal manifestation was the ‘cold-weather tour’ of the district officer, a period of several weeks during which he was away from headquarters, in camp, and was directly visible and accessible to the colonial subjects. The first part looks at this phenomenon in a broad comparative historical perspective, while the second gives a detailed description of it. The possible relationship between such touring and the processes of royal circulation that had existed under the Mughals and their successors is mentioned; the phenomenon could clearly be extended to an analysis of other cases for which there is a rich literature, such as the constant circulation of the Safavid monarchs of sixteenth- and seventeenth-century Iran.

The third part is an attempt at a critique of the logic of this circulation, showing how it was an outcome of the weakness of the links the colonial state had forged with Indian society, which this manifestation tried to remedy by mimicking royal forms of travelling, without much substance. The article ends on the decline of the tour in the face of the growing bureaucratization of the Raj, which made it increasingly routine and superficial, and of the gradual process of devolution of power, which radically altered its political significance.

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25 A selection of some of these tales has recently been translated by Simon Dobby, Wonder-Tales of South Asia: Translated from Hindi, Urdu, Nepali and Persian (Jersey, 2000).

In the last section, there is a drift away from an analysis of actual forms of circulation towards a consideration of their representation in texts. Servan-Schreiber’s description of the Bhojpuri world of peddling (which is not entirely removed from Bhattacharya’s analysis of north-western India), offers a transition inasmuch as it also focuses to an extent on the physical circulation of narratives across space, while equally developing an analysis of the representation of circulation embodied in them. With Narayana Rao and Subrahmanyan’s chapter, attention shifts almost exclusively to the universe of representation as we find it in travel accounts written by South Indian literati from the first half of the nineteenth century. Closing the volume with studies of representations is not merely a concession to the fashions of the times, but a manner of reaffirming the necessity of combining such a study with a continued attention to social and economic realities. The Bhojpuri peddlers Servan-Schreiber takes as her subject of study are not a homogeneous group, socially or in religious terms; they include Hindus as well as Muslims, sanyasis and madasis as well as petty merchants, and their itineraries are as varied as the style and substance of their tales. The advent of the colonial regime does not appear to have had a very direct impact on the realm of their circulation, which included parts of northern India and Nepal, but its conditions were changed by the print revolution which allowed a few enterprising publishers to cash in on the popularity of their tales to develop a thriving business in the production of ‘chap-books’. Though there are few precise indications as to the actual diffusion of these books amongst a population which remained largely illiterate, the advent of print certainly led to a reorganisation of existing circuits and some transformation of practices. In keeping with Benedict Anderson’s all-too-familiar thesis, this print revolution helped spread the imagined community of the nation throughout the countryside of northern India as some of the itinerant singers became nationalistic bards after a fashion, but at a later stage it could also be appropriated by upholders of a specific Bhojpuri regional nationalism fighting against
the supremacy of standard Hindi. So there remains the question of the scale of circulatory phenomena, as at the space they strucature can vary enormously according to period and circumstances.

In Narayana Rao and Subrahmanyan’s essay, which closes the volume, the emphasis is on the circulation of Indian travellers in early-nineteenth-century India, as recounted in two Telugu texts. These texts were written between 1830 and 1850, but they are part of an already existing ‘mental geography’ which was not simply the result of the colonial encounter.36 Recounting their travels within India, whether long or short, is for these travellers a way of reaffirming the existence of a community of knowledge and belief at the time when it is confronted by the challenges of Eupean rule and ascendant Western Christianity. In Vitaswami’s account, in particular, there is an element of ambivalence: while his account is on the whole extremely favourable to the Company (of which Vitaswami was a servant), he is at the same time bent on replicating a ‘royal’ style of travelling which evokes more traditional Indian universe, but which also largely rests on exploiting the new facilities created by Company rule, such as postal relays, which were not quite so institutionalised in pre-British Indian systems. However the existence of an ethnographic strand in the writings examined, more particularly that of Kola Seeschala Kavi, is in itself indicative of the absence of a completely self-evident community of knowledge and belief in the India of the first half of the nineteenth century. It is somewhat as if Arthur Young’s travels had taken place in England, and not in France. In the United Kingdom of that period, such ethnographic travel writing was possible only in relation to the savage ‘Celtic fringe’, the Scottish Highlands or mountainous Wales, but it would have been badly received if applied to the towns of the industrial revolution. It is true that the Nilgiris, chosen by Kola Seeschala Kavi as the destination of his travels, were probably, to the plainman of South India, the equivalent of what the Scottish Highlands were to the denizens of the Home Counties, an exotic land inhabited by savage tribes with something bizarre customs. What the confrontation of these two fascinating ‘indigenous’ travel accounts reveals is that there was no unified regime of travel writing in India at the time, which in turn reflects the uncertainty regarding the ‘circulatory regime’ as it evolved during the early phase of British rule. But it is equally certain that the disciplinary aspect of the colonial regime, alluded to previously, was totally absent from the mind of the Indian authors examined.

Taken together, these essays represent soundings in a field of study which, we would argue, should occupy a far more central place in general views of South Asian history than is currently the case. It has been our attempt here to draw upon newer trends in South Asian historiography, while at the same time not sacrificing the hard-won gains of earlier generations of historians at the altar of transient fashion. Thus, the analysis of concrete social and economic phenomena from the eighteenth, nineteenth and twentieth centuries will be found side by side here with the history of the key institutions that shaped circulation, as well as discussions concerning the discursive aspects of the problem of circulation, whether those produced by the colonial state or outside it. It is also our hope to engage by this means with colleagues from other disciplines who have examined parallel problems, using other methods. On the one hand, this is a reference to works by geographers and development economists who have focused on such questions as rural–urban migration, spatial networks and the like, but it is also a nod in the direction of a relatively young field, namely that part of South Asian anthropology that has chosen to take as its object not the village or the fixed community but such issues as pilgrimage, transhumance, or even the transfer of religious ideas, movements and objects. If the present work appears to our colleagues from these neighbouring disciplines to open up fruitful areas of reflection and dialogue, it will have amply served its purpose. But a last word may not be out of place on the problem of ‘circulation’ itself, which, as an issue to be addressed by historians, is by no means exclusive to South Asia. We have already noted in the preceding pages that conventional studies have too often taken it to be a mere synonym for the study of means of transport, or alternatively

have subsumed it as a minor category relative to the far more signif-
cant interest in migration and uni-directional movement. The idea
of the 'frontier', whether impermeable or porous, has been much
celebrated in a series of historicities, of which those of Central
Asia and the American West come most notably to mind. As a manner
of conceptualising the spatial aspect of societal interaction, the fron-
tier no doubt has much to recommend it as a concept, especially when
it is taken to be shifting rather than fixed, a process rather than a sim-
plicity barrier that separates cultural or economic zones. But as the stu-
dies that follow will hopefully demonstrate, the idea of circulation is
arguably no less robust a concept, which allows one moreover to sidestep the diffusionist traps that beset so much of our conceptualis-
ation of historical processes even today. Thus, to conclude, even if
our materials here are primarily South Asian, it is not only to special-
ists of South Asia that the current volume is addressed. It remains to
be seen whether the idea of 'circulation' that we have espoused here
proves to be one that has a viable life outside of the historiographical
confines within which it has initially been put to use.

27 See, for example, Richard M. Eaton, The Rise of Islam and the Bengal Frontie-
  r, 1204–1760 (Delhi, 1994), as also the reflections and references in Gunatilaka,
  'The Silent Frontier'.
And, although by focusing on the nexus between science and power they provide a healthy antidote to the widely held notion that modern science spreads purely because of the rationality of its propositions, these studies largely shape their interpretative arguments with suggestions, supposition, assertion, and sometimes appeal to 'political correctness', rather than through demonstration of their historical claims and theses.

The issue of the spread of specialised knowledge and its practices is rendered all the more crucial in the light of recent work in the history and sociology of science. Shifting the focus of study from science as a body of knowledge-claims about the natural world to the material and social practices involved in scientific work, historians and sociologists of science have convincingly shown that science is characteristically a local and situated activity. Its dissemination from its site of production to other settings even within such a *prima facie* homogeneous cultural space as Western Europe has been shown to be highly problematic. As one scholar has aptly put it, there is no 'algorithmic recipe' for successful replication. Scientific propositions, objects and practices are thus neither innately universal (because of their epistemological force) nor forcibly imposed on others. Rather, they disseminate only through processes of accommodation and negotiation, processes which necessarily reshape or reconfigure both the new objects or procedures and the social structures into which they are introduced.

Exporting scientific produce beyond its site of production often entails the replication of instruments and material and intellectual skills, but it requires even more importantly that gestures, protocols, social rules, conventions and modes of civility associated with the scientific specialty in question be negotiated with respect to those of the host community, entailing their reconfiguration to fit the new

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4. Although some scholars have touched on the relationship between Europeans and their native informants, the nature of the knowledge and expertise of the latter is eluded. As an example, see Nicholas B. Dirks, 'Colonial Histories and Native Informants: Biography of an Archive', in Carol A. Breckenridge and Peter van der Veen (eds.), *Orientalism and the Postcolonial Predicament* (Philadelphia, 1993), pp. 279-315.

environment. Moreover, these processes of negotiation and accommodation, far from being a one-way process, can also affect the nature of the scientific produce at its place of origin through processes of circulation and feedback.

The field sciences—like geographical and revenue surveying, but also botany, forestry, agriculture, and anthropology—in the context of late-eighteenth- and early-nineteenth-century British colonial expansion, present an ideal terrain to examine their formation and dissemination. Indeed, this period saw the rise, both in Britain and in its colonies, of a number of field sciences that at once fed on and reinforced the colonial order. It also saw Britons themselves in the process of forging a national identity. And although colonial institutions in India grew out of pre-existing administrations of indigenous regimes and inherited much of their workforces, they were transformed by the new situation through mechanisms of accommodation and negotiation, producing novel forms of knowledge that were not simply linear developments of past practices and traditions. The study of colonial scientific and technological institutions thus calls for an approach that accounts for the complex character of knowledge-making during this period.

This essay is an attempt to examine geographical surveying and map-making practices in India and Great Britain in the early colonial period. Its intention is to highlight the ways in which the circulation of competencies and objects, and the attempts to control this circulation, contributed to the emergence of modern-day map literacy and culture. By providing an alternative account of the cultural and political history of the construction of geographical knowledge and practices based on historical evidence, I hope to show the untenability of the claims of recent social historical scholarship that European and Indian scientific practices were radically different at the time of colonization, that 'Western' science was introduced into India by the British as part of the 'civilising mission'. Indeed, the case of the geographical exploration of British India in the late-eighteenth and early-nineteenth centuries provides a good illustration of the way in which British and Indian practitioners and skills met around specific projects, how they were reshaped and the modern map and its uses co-emerged in India and Britain through the colonial encounter.

Large-scale survey operations in South Asia were started in the wake of the British conquest of Bengal in the mid-eighteenth century, built on pre-existing indigenous surveying institutions and their workforces. The British depended crucially on their autochthonous intermediaries and the role of South Asians and their technical culture was not negligible in this history. The Survey of India, although named thus only in 1878, represents one of the oldest modern scientific and technological enterprises in the world, dating back to the mid-eighteenth century, and was arguably the technical backbone of British administration in India. Known mainly for its maps, the Survey was also a pioneer in the invention and production of social statistics, it made substantial contributions to geodesy, and it undertook the conception, manufacture and maintenance of sophisticated survey instruments. As the historian of Victorian science Susan Faye Cannon remarked: The Great Trigonometrical Survey of India shows the workings of British policy better than still another study of Macaulay’s education minute... It is clear that we need to contest the commonly accepted assumption that the history of science or, more modestly, the history of modern surveying and mapping can be told as an ariarchic ‘West European’ story with no mention of concomitant developments in other parts of the globe and their influence on the course of the shaping of this history. An increasing number of historians have in recent years convincingly developed the thesis that Britain and its empire were co-constituted. I hope to show that

the history of the modern geographical map is part of this general narrative and can only be meaningfully told as a connected and circulatory story, simultaneously involving and constructing metropolis and colony.11

I start by briefly surveying the state of geographical practices in Britain and South Asia until around the middle of the eighteenth century, then follow their redeployment and circulation in the light of expanding British territorial conquests in the subcontinent. In the last section, I focus on the efforts of the East India Company to control the circulation of maps in order to make them indispensable instruments for administration and movement as we know them today.

British and Indian Geographical Practices in the Seventeenth and Eighteenth Centuries

The East India Company initially represented no more than a few hundred British civilians and, once they had begun to build fortresses, a couple of thousand British troops. Even at the apogee of empire in the eighteenth century, the British presence in India never exceeded a few thousand civilians, a number at all times too small not to rely heavily upon local intermediaries for most commercial, administrative and technical tasks.12 It is obvious that a flourishing trade already existed in the Indian Ocean long before Europeans entered the region. The latter had thus to negotiate their way into well-established commercial networks in a world that went from West Asia and East Africa to South East Asia and China, the Indian subcontinent being both geographically and economically an obligatory passage point. In


12 One estimate, for the Mughal Presidency during the first half of the nineteenth century puts the proportion of British to South Asians directly serving the Company's civil administration alone at 1 to 180. See Robert E. Frykenberg, Gunner Districts 1788–1868: A History of Local Influence and Central Authority in South India (Oxford, 1965), p. 7.


14 The only exceptions to this were the Jesuits. Since the earliest days of
Territorial acquisition in South Asia changed needs. Following Plassey in 1757, surveys of the new possessions were ordered to defend frontiers, chart inland and river trade routes, ascertain the extent and revenue potentials of cultivated lands, and ensure the safety and regularity of communications. But not only were the British too few to undertake surveys, those few had little or no experience in terrestrial surveying. In the wake of Plassey, when the Bengal Council wrote to the Navy for a surveyor, Admiral Charles Watson, commander of the fleet at Calcutta, replied:

I have received your Letter of this Day's Date, acquainting me with the necessity you are under of having an exact Survey, and regular Plan of the Lands granted the Company by the Nabobs, and requesting I would assist you, from the Squadron with such Persons, as are properly qualified for such an Undertaking.

It appears to me to be a Work, requiring so much Care and Exactness, that I know no one in the Squadron capable of it; and if there were, I am very certain such a Performance would require much more Time, than I shall continue here. But if upon an Enquiry in the Squadron, you find any one, who will answer your Purpose, and is willing to remain in India, I will give Orders for his being discharged.

mission in China, they took as a major goal the geographical delineation of the Chinese empire. The culminating point of this enterprise was the monumental atlas produced by the French Jesuits in the first half of the eighteenth century. See Theodore H. Fosk, 'A Western Interpretation of China: Jesuit Cartography', in Charles E. Ronan and Bonnie B.C. Oh (eds), East and West. The Jesuits in China, 1582-1773 (Chicago, 1988), pp. 209–51. For the Indian subcontinent, the Jesuits also made regular astronomical observations, recording the coordinates of numerous places. These, in turn, were worked into maps by map-makers like Anville. See Jean-Baptiste Bourguignon d’Anville, Éléments de cartes géographiques sur le cart de l’Inde (Paris, 1753).

11 See British Library, Oriental and India Office Collections (henceforth referred to as OIOC), Bengal Public Consultations, 1 August 1757. PJ1/29, f. 247 (letter dated 27 July 1757 from Robert Clive and members of Council at Murshidabad [?] to the President and Council of Fort William). Also partially reproduced in J. Lang, Selections from Unpublished Records of Governments for the years 1748 to 1767 inclusive Relating mainly to the Social Conditions of Bengal (Calcutta, 1869), p. 99, document 244.

12 Letter dated 3 August 1757 from Admiral Charles Watson to the President and Council of Fort William in OIOC, Bengal Public Consultations, 1 August 1757, PJ1/29, f. 259. Also in Lang, Selections, p. 99, document 245. In this citation, and those that follow, irregularities in spelling and grammar have been retained as they appear in the original works or translations and have not been identified in the text.

Inde, of the 184 British employees of the East India Company, listed by Reginald Phillimore in his comprehensive study of the records of the Survey of India, who were in any way involved with terrestrial surveying in the eighteenth century, none had any formal training in terrestrial surveying techniques. Since many of them were in the army, they did pick up the art of making road traverses and drawing route maps in the course of their career. In the 1760s, when large-scale survey work was first undertaken in India, there was no unified detailed map of the British Isles—with the notable exception of a map of Scotland, made by Scots under the direction of William Roy in the wake of the 1745 uprising. There was, however, no dearth of coastal, harbour and fortification maps made for the Board of Ordnance, and route, estate and county maps in the civilian domain. Powerful tools for aggressive governmental control of land as tax bases, natural resources, and national territories, the latter sorts of maps were based on measurements made by estate and county surveyors whose skills and instruments (most commonly the chain and cross head), besides being unavailable in India, were inappropriate for the purposes of extensive surveying. The Ordnance Survey of Great Britain and Ireland was founded only in 1791 and not until 1801 did the first ordnance map appear.

1757, PJ1/29, f. 259. Also in Lang, Selections, p. 99, document 245. In this citation, and those that follow, irregularities in spelling and grammar have been retained as they appear in the original works or translations and have not been identified in the text.


In the Mughal empire, data collected were stored in the records of the village headmen and accountants, and periodically checked by other state officials; aggregate data may be found for the empire as a whole from the late sixteenth century onwards. For route surveys, the Jesuit António Monserrate (1556–1600), who spent many years in Akbar’s court, describes the care with which the latter had his marches measured during an expedition to Kabul in 1581:

'The distance of each day’s march is measured with a ten-foot rod by special officers, who are instructed to follow the King closely and to measure the distance from the moment he leaves his pavilion. These measurements are afterwards found very useful in computing the area of provinces and the distances of places apart, for purposes of sending envoys and royal edicts, and in emergencies. Two hundred lengths of the ten-foot rod make what is called in Persian a ‘Carot’, but in the Indian tongue a ‘Kos’. This is equal to two miles, and is the usual measure of distance.'

Similarly, another Jesuit, Joseph Tiefenthaler (1710–85), who lived and travelled extensively in the subcontinent for over forty years, describes some of the measures used in computing distances in different parts of north India:

In this country, the miles are measured with a cord 50 Royal Yards (Ganga) long; seven lengths of this cord make an Indian league. Another way of determining the mile is by taking 400 lengths (Siphatmata) each of 129 yards, measured against a long bamboo. These two means yield the same result: each gives 5000 yards or a league. Shahjahan, the Afghan king of Delhi, divided the league into 60 Jamere; each of 60 Sekhundayards . . . which are shorter than the Royal Yards: they are used in the province of Delhi . . .'

—Ganibaram"—a Sanskrit work on land measurement translated by Benjamin Heyne, Memoirs of the Survey of India (1773–1866), 3, f. 2.


The distances measured were then expressed in tabular form and included in state manuals used for administration, revenue collection and other purposes, like those mentioned by Monserrate. These "geometres" provided systematic descriptions of provinces and their subdivisions, noting their general location and territorial extent, largely—though not exclusively—measuring the function of countrywide maps as we conceive it today (I shall come back to this question later). The most famous of these was the A'rin-i Akbari, compiled by Abu'l Fadl ibn Mubarak (1551–1602) at the end of the sixteenth century. In addition to poles, ropes, foodgrain, and the human body, attention must also be drawn to the astrolabe, produced by Muslim instrument-makers in South Asia. This was widely used by astronomers, Hindu and Muslim alike, at least since the early fourteenth century, to measure celestial and terrestrial co-ordinates, and texts on its use were translated from Arabic and Persian manuals towards the end of the century. Finally, one can mention massive masonry instruments of the sort found in Jaipur, Delhi and Ujjain, testimony to the contact between South and Central Asia. In fact, the so-called 'Samargand School' of astronomy flourished in the subcontinent under Mughal patronage. By the seventeenth century, there is fair evidence of a general mingling of Islamic measuring and surveying techniques with those that existed previously, as also of their widespread use.

At all events, far from being a geographical tabula rasa, terrestrial surveying, measuring, and representation were common in South Asia, constantly developing through processes of circulation and negotiated adaptation of embodied skills and instruments, intimately linked with the culture and economics of pre-colonial regimes. In this respect, the development and uses of terrestrial surveying in South Asia were not very different from those in contemporary Britain. In the same way, then, as for other colonial activities, the British were led to rely upon indigenous staff, their skills and recloning methods for their survey operations in India.

The Emergence of Large-scale Surveying in India and Britain

The European mapping of India started by mobilising available resources within the institutions where the encounter between South Asians and Europeans took place—the army, judiciary, and revenue services—as also through individual relationships. Thus, Tiefenthaller enlisted a local person 'versed in geography with a compass and had him travel to the mountains of Kumaon and the cataracts of the Ghagra ... to Panna and Descura [sic] in order to measure the distances and determine their respective locations.' He also had three huge maps made of the courses of the Ganges and the Ghagra rivers by 'people of the country.' And the French savant-traveller Abraham-Hyacinth Anquetil-Dupont (1731–1805) has left the following amusing account of early European military route surveys:

'I have travelled in the interior of India alone, in a group, and with the army. The commanding officer spends the better part of the day sleeping in his

25 Abu'l Fadl ibn Mubarak, A'rin-i Akbari, translated into the English by H. Blochmann (vol. 1), and H. S. Jarrett (vols 11 and 111), 3 vols (Calcutta, 1873–94). In the historical and geographical description of the twelve subahs of Akbar's empire, Abu'l Fadl describes the different units of measure used in the empire for route, and cadastral, surveys (vol. 1, pp. 58–62 and 414–18). In the section on the beliefs and knowledge of the Hindus, he details the means used in the region to determine longitude and latitude, to which he appends a lengthy table of the coordinates of known places from the mid-Atlantic to the Far East (vol. 1, pp. 33–6 and 46–105). See also Jadunath Sarkar, The India of Aryanvaish, Topography, Statistics, and Roads; Compared with the India of Akbar. With extracts from the Khudai-i-samara of and the Chahar Gahtan (Calcutta, 1901).


27 George Rusby Kaye, The Astronomical Observatories of Jai Singh (Calcutta, 1918), and, more generally, Richard C. Foltz, Mughal India and Central Asia (Karchki, 2000).
pulauquin. At dinner he asks his Dhobh [interpreter]... what distance they have travelled and which places they have passed. The latter in turn asks the porters or else replies himself, for reply one must; and the distances and place names are inscribed on the itinari, on the map... which, by the way, I found perfectly well made.30

James Rennell (1742–1830), 'undoubtedly the first great English geographer', can be considered the first Englishman to have systematized the use of these disparate traditions together with those of European terrestrial and coastal surveying in an on-site project.31 Born in Devonshire and orphaned at an early age, he was taken charge of by Gilbert Burtonington, the vicar of nearby Chudleigh. The latter ensured that the boy got an elementary education locally, securing him a job at age 14 as an ensign on a British naval vessel at the start of the Seven Years' War (1756–63). Operating off the coast of Brittany, the young James picked up the art of coastal and harbour surveying.

It was this skill that Rennell was to use to great advantage from 1764 to 1777, when he managed to procure himself a place in India in the service of the East India Company, first as probationer engineer and later as Surveyor-General of Bengal. The first major task he was given was to make a survey of the Ganges delta in order to find 'the shortest and safest Channel leading from the great River to Channel Creek or Rangafulla'.32 The British saw the survey of navigable rivers as of prime importance. Since the Ganges–Brahmaputra delta forms a large part of this territory, Rennell used the navigable distributaries in the same way as one would a sea coast, tracing an outline of the myriad of islands that made up the delta. In order to do this, he used

30 Translated by the present author from ibid., pp. 466–7. It must be mentioned that the itinari or map referred to by Dugernon was a linear, route survey map and not a topographical map as one might be led to imagine on reading his description.
32 Orders from the Hon'ble Henry Vansittart Esq., Governor of Fort William, dated 6 May 1764 to James Rennell, reprinted in T. H. D. La Touche (ed.), The Journals of Major James Rennell: Written for the Information of the Government of Bengal during his Survey of the Ganges and Brahmaputra Rivers 1764 to 1767 (Calcutta, 1910), p. 9. Rangafulla is the name of the creek connecting the Hooghly with the Sundarban.

the traditional methods of the coastal surveyor he had picked up during his service in the Royal Navy, informing himself in addition from the local people as to the navigability of the various channels and creeks he surveyed.33

Upon his return to England in 1777, when he decided to publish terrestrial maps of Bengal, Bihar and Orissa, and later of the whole subcontinent, Rennell used much of the material from his river surveys. For the rest, although Rennell did personally conduct some terrestrial surveys mainly around the delta region, he relied mainly on the route marches of soldiers and surveyors, both British and Indian. From their journals and travel accounts, as well as those of other Asian and European travellers and missionaries, he began compiling his map of Bengal and then of the whole of the subcontinent. Interestingly, he acknowledged all his sources in the introduction to the Memoir that accompanied his first map of the Indian subcontinent published in 1783. Foremost among these peripatets were a 'Sepoy officer' Chulam Muhammad, for 'the roads and country between Bengal and the Deccan', Mirza Mughal Beg for north-western India, and Sadanand—'a Brahmin of uncommon genius and knowledge', in Rennell's words—for Gujarat.34 His European sources of information and contemporary informants consisted notably of the Jesuits Monseurre and Tieffenhaker, and Frenchmen in India like the Marquis de Bussy, Jean Law de Lauriston, Antoine Polier, and Claude Martin—who themselves, as noted above, relied heavily on indigenous surveying skills.35 And, of course, Rennell extensively used the tables of Ain-i Akbari in the Preface to the first edition of the Memoir; he writes: 'In the division of Hindustan into Soubahs, &c. I have followed the mode adopted by the Emperor Achar, as it appeared to me to be the most permanent one: for the ideas of the boundaries are

33 Ibid. See also Rennell's correspondence with his guardian the Rev. Gilbert Burtonington, OJOC, MSS East/1073, and his manuscript maps held at the Royal Geographical Society Archives.
not only impressed on the minds of the natives by tradition, but are
also ascertainment in the Ayeresh Acharae; a register of the highest au-
thority. 36

Moreover, in the emblematic cartoon on the lower right hand
side of the first edition of the map of the peninsula, one sees an open
acknowledgement of co-operation between South Asian and British
dities, a Brahman giving sacred manuscripts (‘shaster’) to Britannia
while other Brahman, carrying other manuscripts in envelopes, pa-
tiently await their turn. 37

Rennell’s map was far denser with information than any thus far
made of Britain or of its overseas territories, and was to serve as a
model of detail and accuracy for the future mapping of Britain itself.
In recognition of his achievements, Rennell was awarded the Copley
Medal of the Royal Society in 1791. On the occasion, Sir Joseph
Banks, the Society’s president, proclaimed:

Would I could say that England proud as she is of being esteemed by
surrounding nations the Queen of Scientific improvements, could boast of
a general Map as well executed as the Major’s [Rennell’s] delineation of Ben-
gal and Bihar, a tract of Country considerably larger in extent than the whole
of Great Britain and Ireland; ... the accuracy of his particular surveys stands
unrivalled by the most laboured County Maps this nation has hitherto been
able to produce. 38

Indeed, Rennell and his friend William Roy (of the map of Scotland
fame) had for some years been egging public opinion to pressurize the
government to undertake a uniform survey of the British Isles by
ridiculing the current state of maps of Britain and its seas. 39 Now
joined by Banks, their rhetorical plea paid off that very year with the
foundings of the Ordnance Survey.

However, the surveying techniques and instruments used in Bri-

36 Rennell, Memoir (1st ed.), p. ii.
37 See ‘Explanation of the Emblematical Frontispiece to the Map’, in ibid.,
p. xii.
39 See the Preface to the 2nd edition of Rennell’s Memoir, pp. iv–v, n. Roy
had already tried twice, in 1763 and again in 1766, to persuade the government
to make an official survey of the whole of Britain. See Dalmau-Smith and Kain,
English Maps, p. 218.

39 / Society and Circulation

rain were to be very different from those developed in India. While triangulation, perfected mainly in France in the mid-eighteenth cen-
tury as a procedure for extensive surveying, was adopted as the sole
technique of countrywide surveying in Britain, it was not with the
French repeating circle, but with a 3-foot alidade and theodolite, con-
ceived of in England, that the surveys were actually conducted. 40 This
reconfiguration is not surprising, given the difference in the respective
compositions and traditions of the local communities involved in
surveying in Britain, France and India, notably their relationships
with instruments, instrument-makers, and patronage networks. 41

In India, it was the composite method of data collection that was
extended and further developed by Rennell’s successors. Thus, Thomas
Call (Surveyor General of Bengal, 1777–88) employed at least forty
Indians to collect information for his Atlas of India. He writes in 1783:
I have for a year and half past, employed 6 munshees and 30
Hucarrows at my own expense, to travel through the different pars
of India to collect information. [...]. This I did with the permission of
the Hon’ble the Governor General. And again, a year later: I have
by order of the Governor General employed Munshys to survey some
Roads between Places well ascertained in the Map, and have procured
some very useful information. 42

Nor was this a stray phenomenon, nor one used by relatively minor
survey officials. On the contrary, this massive dependence on local
surveying skills was widespread. The mathematician and astronomer
Reuben Burrow (1747–92), one-time assistant to the Astronomer
Royal Nevil Maskelyne, was another who collected routes through
40 See Close, The Early Years, and Sven Widmalm, ‘Accuracy, Rhetoric, and
Spirit in the Eighteenth Century, ed. Tom Frängqvist, J.L. Heilbron and R.E.
41 It is also interesting to note that while the plane table had been known in
England since at least the eighteenth century, it was not used for extensive surveys
there until the beginning of the twentieth century. In India, on the other hand,
the plane table was introduced in the late eighteenth century in the Madras survey
operations and was regularly used since.
42 OIOC, Bengal Public Consultation, G1/10/1783 and 29/11/86: P72/63 and
P737 respectively. A number of the maps from similar surveys are held in the
British Library: see, for instance, Add. MSS 13907 (a, b, c, d, e).
autochthonous agency. Alexander Allan (1764–1820), who was to become a director of the East India Company and Member of Parliament for Berwick (1814–19), was for a time commander of the fifty-strong indigenous Corps of Guides established in Madras presidency in 1780. The Guides, he wrote, "have examined, and made every necessary remark upon, near 5000 miles of roads in the Carnatic and Mysore country, which they have compiled into the form of a book of roads... I consider it a duty I owe to the Corps of Guides... to request your Lordship [the Governor of Madras] will transmit to the Hon'ble the Court of Directors their maps and field books, also their book of roads, which I have had translated into English." Needless to add that Allan, as much as his predecessor at the head of the Corps of Guides, had neither the competence, nor the financial means, nor the time (in view of the wars in the southern peninsula) to train the guides (mainly former bharanas) as surveyors. In addition, many of them relied on Indian astronomers for stellar observations.

In addition to this, massive deployment of indigenous personnel and their embodied skills for surveying and astronomical control, many Europeans had local texts on surveying and astronomy translated into English and made detailed notes on autochthonous surveying techniques and methods for determining latitude. This exercise in tradition carried on well into the nineteenth century. The best known of these enterprises is the one carried out by Colonel Colin Mackenzie (1754–1821), Surveyor-General of India from 1815 until his death. Indeed, Mackenzie is even portrayed as a composite person surrounded by his indigenous collaborators, or 'pundits', as they came to be called. And when triangulation was introduced into the subcontinent, it remained for a long time just one, albeit important, technique, used alongside others such as pacing and reckoning distance as a function of time (with the day's march as the common unit). The task of translating and arranging reports into maps was not a simple one, as a whole gamut of special procedures and protocols had to be constructed. Charles Reynolds (Surveyor General of Bombay 1796–1807), who organised a series of survey teams composed exclusively of South Asians to crisscross the subcontinent, wrote to his superiors anxious at the size of his budget: 'The[r] surveys cannot be rendered to use if they are taken down and translated by any other than a person conversant with the business.'

In the decades that followed, the adaptation, maintenance and repair of existing instruments often involved modifying their structure and protocols for use, and hence their re-calibration. The English perambulator was found to be 'illibary, bad in principle, and incapable of working except on a smooth road or bowling green; across country they go to pieces in a mile or two.' In the 1780s, a Captain John Pringle of the Madras Infantry designed an instrument that was more resilient and better suited to the nature and gait of local lascars (footmen). By the mid-nineteenth century, the instrument, having undergone continuous modifications, was still in use but looked and operated very differently from its English cousin. Novel survey methods had at times to be forged for circumstances and kinds of

67 South Asia was not the only place where pacing and the day's march were standard units of geographical distance: the same procedures were at work even in North America in the mid-eighteenth century. See James H. Merrell, Into the American Woods: Negotiators on the Pennsylvania Frontier (New York and London, 2009). I thank Kathy Klijnninger of the Graduate Program in Modern History, Cornell University, for drawing my attention to this similarity and for the reference.


70 For further details on the development and evolution of the perambulator in India, see Philimore, Historical Records, vol. 1, pp. 198–9.
terrain that precluded the use of standard techniques—the mapping of Central Asia in the 1860s using the rigorously calibrated pace of Indian surveyors is a good example. Indeed, so distinct were the practices of the Survey of India from those prevalent in Britain that when, in 1851, the Thomason Engineering College was established in Roorkee (northern India) to train surveyors, an entirely new manual had to be written, for 'scarcely any of the English works on Geodesy extant, touch on, or afford any practical insight into, the system of Survey, as carried on and as peculiarly applicable to this country'. Radhanath Shigdar, the Survey's chief computer, wrote more than half the chapters in the book. It might be worth pointing out here that, although survey operations everywhere in the subcontinent depended upon indigenous agency, the communities, the procedures, skills and instruments involved had differed in the three Presidencies until the establishment of the engineering college at Roorkee. A close study of the Manual reveals that, as a compendium of most of these 'local' operations and methods, it was an attempt to standardize and circulate them throughout an increasingly centrally administered territory.

The Emergence of the Map as an 'Objective'
Geographical Representation

If it can be argued that the mapmaking practices that emerged in the course of this institutionalized interaction were indeed hybrid, resulting from the circulation of people, incorporated skills, instruments, procedures, etc., what can be said of the representation constructed by the modern map? Is not the map, as we know it, a representation that emerges from a uniquely European epistemology? What could

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maps, granted that they existed in other cultures, have represented for them? Finally, were maps always part of a European representation of terrestrial space, indispensable instruments for its visualization and mastery? While it is true that maps, qua 'objective' topographical representations, are all-pervading in today's world, constituting an indispensable medium of everyday orientation and communication, this idea is itself the result of a long process. We often tend to neglect the fact that maps themselves have a history that includes the evolution of social networks of map producers, their patrons, and map users—as well as epistemological questions concerning their function as 'accurate' documents. Even more is it true that the East India Company played a significant role in this process. In order to get a glimpse of this contribution, let us turn to what maps represented, and the uses to which they were put, respectively, by South Asians and the British in the early decades of colonial rule, and finally how these changed through the colonial encounter.

As remarked earlier, a large number of maps are known to have existed in pre-colonial India. The variety of mapping styles displayed in these representations bears witness to the fact that South Asia is a region as large and as diverse as Europe, with age-old interactions with major Old-World cultures. Interestingly, some of them use colour conventions: light brown for undifferentiated areas of land, dark brown for mountains, blues for rivers, ivory for oceans, etc.

Now, although the exact uses of all these artefacts cannot be precisely determined, at least some of them had definite military, fiscal and religious ends, such as pilgrimage maps and cosmographic globes and charts. There is at least one known world atlas, comprising 34 map sheets made according to Persian cylindrical projection techniques, contained within a seventeenth-century (1647) encyclopaedic work, Shahid-i Sadq, by Muhammad Sadiq ibn Muhammad Salih of Jaunpur (also known as Sadq Isfahani): it is important to remember that South Asia had, by then been in constant contact with—and


53 For a recent treatment of the ways in which maps have interacted with au-

was indeed an important part of—the Islamic world for almost a millennium.\textsuperscript{35} Also, at least half-a-dozen cosmographic globes, all largely based on the Parnass, are known to exist and are held in various collections in Britain and India. The oldest and perhaps the most fascinating of these is the bhungena of Karna Karna, a globe-shaped brass container intricately etched to indicate the various components of the earth, based on Parnassic sources but modified in the light of knowledge derived from post-Prolemaic Sanskrit astronomers. It was most probably made to hold spices.\textsuperscript{36} Besides, some Jain paintings have been identified by art historians as pilgrimage route maps.\textsuperscript{37} And a seafarer’s manual with sea charts, dating from the mid-seventeenth century, discovered recently, attests to the use of maps in navigation. A juridical use is described by Asad Beg Qazwini, a minor official at the Mughal court between the reigns of Akbar (reigned 1556–1605) and Shah Jahan (reigned 1628–58). In his memoirs, Tarkhi-i Asad Beg Qazwini, held at the British Library’s Oriental and India Office Collections, Asad Beg recounts how he was depoyed by Akbar to ascertain responsibilities in the escape of a recalcitrant Raja prince from a besieged fort.

A piece of cloth a few yards long [...] was brought and a sketch of the 111 fort was made on it. It showed the river on one side, the walls and the doors on the three other sides. The encampments on all sides were indicated, and [...] the Bakhshi was told to write the names of each of the commanders at their proper place. Each man was to put his own seal to demonstrate his assent to this drawing and its account. The place from which Bir Singh had

\textsuperscript{35} One copy of the Shahidi-\textsuperscript{36} Sadan is held in the Oriental and India Office Collections of the British Library (IO Islamic 1557 and Egerston 1016). See Erfan Habib, ‘Cosmography in Mughal India’, Medieval India, A Miscellany, 4 (1977), pp. 122–34.


than any contemporary atlas, the two extant copies of the maps were primarily ornamental.\textsuperscript{60}

It is worth noting that Rennell did not start his sojourn in India by embarking on a compilation of a map or any part of it. He was initially asked by Henry Vansittart, Governor of Bengal, only to keep a very particular journal of your Proceedings, noting the Appearance and Produce of the Countries through which you pass; the name of every Village, & whatever else may seem remarkable, of which Journal you will give me a Copy along with the drafts you are able to make of the Rivers and Creeks.\textsuperscript{61} It was only a year later, at the instance of Robert Clive, when he returned to India as Vansittart’s successor, that Rennell undertook to make the first map of Bengal, not as an administrative or military instrument, but to illustrate the second of Robert Orme’s three-volume History of the Military Transactions of the British Nation in India from the Year 1745. In his bid for the highly influential new governor’s patronage, Rennell also drew a number of maps for Clive’s personal collection.\textsuperscript{62} Even Anville’s Carte de l’Inde, although compiled for the more map-literate French, was made only to hang in the offices of ‘Messieurs les Commissaires du Roi à la Compagnie des Indes’ in Paris.\textsuperscript{63}

The same story can also be told of many contemporary maps drawn by accredited surveyors of the East India Company seeking position or pecuniary benefit. Indeed, these being unique hand-drawn objects, they were highly prized for their aesthetics, and a large number found their way into the private collections of Members of Parliament, members of learned societies, the East India Company’s directors and its influential senior officials. There they adorned walls, juxtaposed with Mughal miniature paintings, and other works executed by Indian painters in the highly fashionable hybrid style that

\textsuperscript{60} They are now held in the prints and drawings collections of the OIOC and of the Bibliothèque nationale de France in Paris.

\textsuperscript{61} La Touche (ed.), The Journals of Major James Rennell, p. 9.


\textsuperscript{63} Anville, Élaboration, p. iii.

\textsuperscript{47} came to be known as ‘Company Art’. So much so that the Company, anxious to have all the information they could collect about their possessions in India, began to show alarm at this ‘flight’ of maps. Already in 1766 the Court of Directors in London was writing to the Governor of Bengal:

_A very slight respect has been shown to the frequently repeated Orders given for transmitting Copies of all such [Plans] as have been and shall be made . . . yet it has appeared to us that such have been in private Custody here [in London], particularly the Survey of the Calcutta Lands. You will therefore be deemed highly culpable in forbearing to pay the attention due on this important point, by furnishing us with copies of all Drawings, Plans, and Surveys in your Custody, made of our Works, Lands, or of any other kind whatever._

And again, two years later:

_We shall be pleased to receive the Chart preparing by Captain Rennell, but at the same time must observe we think the Charts should be first sent to us, and no Copies given but by our permission, a Rule hitherto unattended to, as Lord Clive & Mr Vansittart are both in possession of Captain Rennell’s Survey of the different Provinces._

Soon they were expressing themselves even more strongly on the subject:

_When a survey is taken no one is to be permitted to take a copy of it, which leads us to repeat our Astonishment at the unfriendly Conduct our Surveyors, in that they have sent us no one Production of their labors, tho’ they have already put the Company to a very great Expense . . . [And] this neglect is aggravated by our finding that Maps of all the Provinces are in the Hands of Lord Clive and Governor Vansittart. We should have carried our resentment at their conduct as far as discretion, had not the advice by the last Ship assured us the Surveys will be completed and sent out next year.\textsuperscript{64}

These complaints and thinly veiled threats carried on until the turn of the nineteenth century. Maps, however, kept leaking out, not so much to enemy powers like France, but to influential members of the

\textsuperscript{64} OIOC, Court Despatches to Bengal, dated 19/2/1766, 16/3/68 and 11/11/68 respectively.
Company's own board who either bought them or received them as gifts for past or future favours. Even Rennell's original surveys... were brought home by some of the highest authorities in India, and treated as private property, till they were accidentally discovered in the collection of a lady of rank, and used for the sum of one hundred pounds by the Court of Directors. But what of printed maps of the Indian subcontinent? Were these mass-produced objects not meant for a wider, map-literate public and officials on the field? The answer turns out surprisingly: even these had no stable target public or use in Great Britain until well into the nineteenth century. For instance, it was the rising interest in India among the British reading public in the light of British conquests there, and thus a potentially lucrative market for information about the subcontinent, that prompted Rennell to publish his *Map of Hindoostan*. In the preface to the first two editions, he writes:

"Whilst the theatre of the British Wars in Hindoostan was limited to a particular province of it, little curiosity was excited towards the general Geography of the country: but now that we are engaged in wars, alliances, or negotiations, with all the principal powers of the Empire, and have displayed the British Standards from one extreme of it to the other; A Map of Hindoostan, such as will explain the local circumstances of our political connections, and the marches of our Armies, cannot but be highly interesting to every person whose imagination has been struck by the splendour of our victories, or whose attention is caught by the present critical state of our affairs, in that quarter of the globe." As for the map itself, Rennell stated that it "is contained in two large sheets, which may either be joined together for the purpose of bringing the whole into one view, or bound up separately in an Atlas; as may suit the fancy or convenience of the purchaser." However, given the ornate cartouche and engravings, it was clearly the former of the options that he had in mind. Moreover, the thick-laid paper on which the map was printed made it unsuitable as a simple insert in a book. As Rennell's French translator and publisher, Johann III Bernoulli (1744–1807), wrote in his preface:

68 Bernoulli was indeed publishing the French edition of the *Map of Hindoostan* in a far more map-literate continental-European context where map-use was much more stable than in the British Isles. He sheared the map of its ornaments and frills and printed the insets on high-vellum-content, thin-laid paper that was indeed more resistant to wear in the hands of a reading public used to handling foldout maps. For those who might have wanted to hang the map on a wall, he maintained a uniform scale for each of the three parts of the map and printed them such that they could be stuck together. Although the process through which these maps finally became univocal instruments of geographical representation and indispensable for terrestrial displacement in Great Britain and its empire is a long and complex one and beyond the scope of the present essay, the story cannot be fully told from within the British Isles alone. Indeed, the circulation between India and Britain of geographical practices, practitioners, instruments and maps and efforts to regulate circulation played a crucial role. For instance, the Company sought to put end to the flight of maps in 1809 by ordering that—no publication of maps of India can on any account whatever be authorised... where the Surveys have been made at the Company's Expense... Considering it of the utmost importance that the Geographical and Topographical information regarding India... should be preserved exclusively

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Mr Rennell's map consists, as I said, of two sheets. Intended, in my edition, for insertion into a bound book, these large sheets... would have been quite awkward. Experience has also taught us that thick and brittle paper normally used for such large sheets wears out all too soon along the folds. I thus initially planned to transfer the original map onto 4 sheets, and I had Mr Rennell's map of the Nore (except that of the Subcontinent) copied onto two sheets... But on further reflection, I found that it was impractical to divide the map of the peninsula, or the southern portion, into two, as each part would cover only a fifth of each sheet and one would have to juggle with them too often. I therefore decided to transfer the whole of the southern portion of Mr Rennell's map onto a single sheet and in order to maintain uniformity in the map's dimensions, the paper and ease of use, I thought I could conveniently omit certain accessories with which Mr Rennell has filled the empty areas in the Eastern portion of his map, i.e., a large allegorical cartouche meaningful only to the British.

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67 Translated from Bernoulli (ed.), *Description historique*, vol. 10, p. ii.
for the benefit of the Company and the British nation, and having reason to apprehend that... many valuable surveys, plans, etc., have got into improper hands, we direct that the following regulations... be in future attended to... The Surveyor General is... not to suffer any copies of Papers in his Office to be made, except those ordered by the Governor General. All Surveys, Maps, &c., now in the possession of the different Officers or Heads of Departments, should be called in forthwith, and lodged in the Surveyor General's Office, and... no copies... on any account retained..."

In circulating these orders, the Surveyor General added 'as a standing regulation, that, together with the maps, plans, and Field Books, all surveyors are to give in a declaration that they have not retained or given copies of any of the papers relating to their surveys.'

This prohibition on the publication and circulation of maps, especially revenue survey maps, and heavy budgetary constraints, in due course brought the Survey of India almost to a total halt. Besides, owing to the change of strength of the ink and wash on the manuscript maps during the voyage to Europe, the maps printed in England bore 'no analogy to the heights or magnitude of [hills and mountains]', and consequently misled the judgment in a most important point.

The arrival of a lithographic press in Calcutta in 1822 proved to be a windfall. Lithography, being a wet printing process in which the printed sheet was distorted, did not at that time qualify as a valid process for map reproduction, the prerogative of copper-plate engravers. The local authorities thus had little difficulty in persuading their principals in London to allow them to use this rough-and-ready process for everyday map reproduction. However, the process was quickly perfected and impressively accurate maps were soon coming off the fast increasing number of lithographic presses in India, effectively circumventing the prohibition on their reproduction.

Conclusion

This overview of the start of extensive terrestrial surveying under British colonial rule allows us to engage with other writings concerning surveying practices in colonial India. It is first and foremost easily seen that South Asia was anything but a 'mythical, religious, Hindu space', or a terra incognita. Nor was the act of measurement and observation inherent in land surveying in any way 'quintessentially at once a scientific and a British activity', discriminating them from the indigenous populations. Quantitative terrestrial surveying was as commonly practised in South Asia as it was in Britain in the pre-colonial period and these practices were, in both cases, linked to the fiscal, administrative, royal, religious, and military needs of the..."
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respective regimes. The methods and procedures in the subcontinent were varied, having already been reshaped and reconfigured through the centuries, notably through prolonged interaction with the rest of the Islamic world. Moreover, the British were consciously aware of these skills, openly acknowledged them, and sought to massively redeploy them in their own burgeoning military-fiscal institutions, by continuing to rely on patuwar and other revenue officials, by inducing Indian surveyors, and by translating specialised texts in surveying and astronomy.

This however does not mean, as Richard Grove has recently argued for the case of modern natural history, that early surveying techniques were actually nothing but a sum of South Asian practices, organised on essentially non-European precepts. On the contrary, the deployment of Indians and their skills in surveying took place in a vast reshaping of the specialised communities within which this activity had previously taken place. This refashioning comprised the introduction of new members, like European surveyors and South Asian foot-soldiers and barbars, and devices such as the perambulator, the sextant and the altazimuth theodolite, and a renegotiation of the place of each component inside a new collective.

Shifting the object of study from science as an accumulation of knowledge quanta to that of the material, cultural and circulatory processes involved in its making, also opens a window to the complexity of its spread. As we saw above, the itineraries of Indian or European instrument-makers or persons, like Renell, could disseminate skills from one region to another or transpose techniques like coastal surveying to the terrestrial domain, and reframe them to a heterogeneous bag of other techniques. The journey of a map from Bengal to London could give rise to countryside mapping operations quite different in their methods and procedures from those already in use in other parts of the world. The question of the spread of science cannot be posed in terms of the victory of ‘better’, or more ‘accurate’, technique or theory or skill. More generally, following the trajectory


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of scientific practices, practitioners and artefacts shows rather that they reshape knowledge and society as much in the colonial periphery as they do in the metropolis—at least in the case of imperial Britain. Furthermore, this shift points to the importance of the control of circulation as a means of unifying procedures, or changing the meaning of practices in different contexts. Above all, I would suggest that it points to the inadequacy of any approach that claims to understand the historical processes of the making of a given science while taking as its object a geographically and socially limited space.

Finally, this shift in perspective allows one to see the colonial encounter as a locus of the emergence of certain types of knowledge that would not have emerged but for contingent circumstances. But this is not to assert, as Eugene Ischick would have it, that in the construction of knowledge in the colonial context, the indigenous community ‘exercised greater dominance than did the British’. One must attend to the claim that this knowledge was constructed by the willed activity of the coloniser over the colonised. Indeed, the kinds of knowledge discussed in this essay could only be constructed and sustained within a strong framework of formalised institutions with their imperatives of teamwork and a stratified division of labour. However, despite the asymmetrical relationship between colonisers and colonised, the instruments, procedures, specific human gestures, skills and knowledge (both explicit and tacit), social practices, learning processes, and so on—in short, all that constitutes scientific activity—had to be locally negotiated. The result was necessarily a hybrid culture, similar to what emerged in Britain and, might one add, everywhere else: this is just what characterises the practice of science. Indeed, it is not through deduction from grand ideological positions, but rather from multiplying studies of practices and their circulation in specific contexts, and connecting them across contexts, that a

73 Eugene Ischick, Dialogue and History: Constructing South India, 1795-1895 (Berkeley, 1994). This quote, p. 9.
Labour Circulation between
Sri Lanka and South India in
Historical Perspective

ERIC MEYER

The usual view of South Indian migration to Sri Lanka (arbitrarily
restricted to Tamil migration) describes it as a one-way popu-
lation movement and distinguishes two periods, with half a mil-
leum in between:

— A first wave from the late tenth to the thirteenth century,
characterised by heavy South Indian population flows during
and after the Chola conquest of Rajarasa (the heartland of the
ancient kingdoms, in the irrigated dry zone of the island). The
eventual abandonment of the dry zone, often ascribed to the
disruptive impact of the conquest, would have led to a physical
separation between the population of the wet zone, almost
exclusively Sinhala-speaking, and that of the coastal areas of the
north-east, which became almost exclusively Tamil-speaking.

— A second and much better documented episode, characterised
by an organised influx of labourers of South Indian origin, at-
tracted by British planters and to a lesser degree by labour op-
portunities in towns, ports and on the roads, which reached
its high tide at the beginning of the twentieth century, when
the number of Tamils of recent Indian origin exceeded that of
autochthonous Tamils.

Such a picture is rather misleading, especially as regards the pre-
colonial period; it overemphasises migration waves which are well
documented in the written texts and underestimates continuous popula-
tion flows before and between the two so-called migration waves, the