

Conjuring a river, imagining civilisation: Saraswati, archaeology and science in India

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The depiction of the river Saraswati as an empirical centre of the Harappan civilisation has been marked by intense debate in recent years. Taking the short-lived Saraswati Heritage Project (2002–04) initiated by the Archaeological Survey of India as a case study, this article examines the epistemological emergence of the river and interrogates its historical and ideological relationship to the Harappans and the Aryans. It argues that the epistemic trajectory of Saraswati from a literary entity to an empirical category followed four phases. First, it emerged as a mythical river of colonial Indology; then, as a civilisational river of colonial archaeology; subsequently, as a hydrological body of postcolonial geology and, finally, as an empirical fact of postcolonial archaeology and history. Contrary to historians who attribute the resurrection of the Saraswati solely to the growing influence of Hindutva ideologies, this article argues that the Saraswati is also an epistemic product of the disciplinarian discourse of colonial Indology and postcolonial science. It contends that its ideological and political valence has to be located in the larger discursive universe of colonial and postcolonial scientific practices and not solely attributed to Hindutva.

Keywords: Archaeological Survey of India, Harappan civilisation, Saraswati, archaeology, epistemology

I

Introduction

It was early morning at the Archaeological Survey of India's (ASI) excavation site at Bhirrana. The mechanised roar of passing tractors along

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with the sound of chirping birds broke my sleep. It was my first day at the site. I had arrived the previous evening from Baror, another ASI site in Sri Ganganagar district in Rajasthan, around 20 km away from the Pakistan border. Bhirrana was in the Fatehabad district of Haryana, located next to a bustling village of the same name.¹ After breakfast at the campsite canteen, I was soon walking on the excavation mound. The 30,000 sq. metres mound was less than 50 m away from the ASI camp, separated by a nondescript district road on which plied the occasional state transport buses and local tractors. The excavation mound, rising 5 m above the road, was neatly divided into many dozen squares (Rao et al. 2004: 20). Around a hundred workers were busy in the various activities typical of an excavation site—digging, cleaning and hauling the excavated soil to a dump at the edge of the mound. At one corner of the site, I located the site director—the Superintendent Archaeologist (SA) of the ASI Excavation Branch 1- Nagpur. A man in his mid-fifties, a white cricket hat protecting him from the glare of the morning sun, the SA was engrossed in overseeing a group of women workers, giving instructions as they meticulously cleaned a trench with brushes of varying sizes. Reputed to be one the best field archaeologists of the ASI, he had spent a large part of his earlier career in the 1980s and 1990s working at the Harappan sites of Banawali (Haryana) and Dholavira (Gujarat). According to my informants, he was an ‘old Harappan hand’ and now headed arguably the best excavation branch of the ASI. This was the Nagpur Excavation Branch established by Sir Mortimer Wheeler with his handpicked men in 1948.

Bhirrana was discovered in 1982. Ineffective protection by the Haryana Department of Archaeology and Museums (Rao et al. 2004) meant that the site was now crowded by a football field, an abandoned Muslim cemetery and the mud huts of dalit encroachers. The excavation began twenty years after its discovery, in 2003–04, under the aegis of the

¹ The ASI excavated Bhirrana (Lat. 29°33'N; 75°33'E) for three seasons from 2003–04 to 2005–06. This was one of the six new sites excavated under the Saraswati Heritage Project (SHP) initiated by the Bhartiya Janata Party-led National Democratic Alliance government in 2003. This visit was part of my ethnographic fieldwork on my dissertation project—an anthropological study of archaeological knowledge production by the postcolonial bureaucracy.

Saraswati Heritage Project (SHP) and continued for three seasons till the spring of 2006. My ethnographic work was conducted in its second season of excavation in 2004–05. An article discussing the first season's excavation described the site as a Harappan mound 'located in the northern outskirts of the village [Bhirrana], overlooking the left bank of the *Saraswati*' and the excavation objectives defined as: 'determining the regional identity of the Harappans in the *Saraswati river* valley; understanding the cultural sequence and chronology of the site; and settlement pattern of the early Harappans in the *Saraswati valley*' (ibid.: 20) [italics mine].

The SA began the site tour by taking me to the western corner of the mound, next to the Muslim burial ground, to show me the circular pit dwelling discovered the previous season. The earliest settlers of Bhirrana had lived in subterranean pit dwellings, circular in structure with an average diameter of 2.3 m, occasionally lined with mud bricks. As we stood talking, a draughtsman under the shade of a multi-coloured field umbrella made drawings of the unearthed structure, assisted by a couple of workmen who crouched in the 2m-deep trench taking measurements. In the course of our conversation, the SA proudly remarked that the Carbon 14 dates that they had obtained from these pit dwellings had temporally dated the site to as early as Kot Diji (in Sindh, Pakistan), one of the earliest of the Early Harappan sites dated to 3200–2600 BCE. These dates, he explained, were obtained from about half a dozen charcoal samples given to the Radio Carbon Dating Lab of the Birbal Sahni Institute of Paleobotany in Lucknow. Thus, having established the scientific veracity of his claim, the SA resolutely pronounced: 'Now for sure we can say that the Harappans were the Aryans'. He gesticulated with his outstretched hand, pointing to the verdant greenery that surrounded the site,

This area that you see was the fertile bed of the river Saraswati. Right in its centre is this site inhabited for three millennia. And here we are getting dates analogous to the Kot Diji phase of the Harappans. And we know that the Rig Veda was composed in this area. This proves beyond doubt that the Harappans in the Saraswati basin were not only as early as those found in the western part of the Indus civilisation, but that these were Aryans—the Vedic Harappans.

This 'scientific' association between the Vedas, the Harappans and the river Saraswati and its synthesis into a narrative whole at an archaeological site of the ASI in 2005 in the dusty countryside of northern India was not without history or politics. The discursive genealogy of each of these entities as empirical concepts has had a long and fraught history. This article is a critical enquiry into the epistemological emergence of the Saraswati as a conceptual category with a powerful political value and an interrogation of its relationship to Harappans and Aryans. I delineate the epistemic trajectory of a mythological entity into a hydrological body that was not only resurrected within the disciplinary discourse of colonial geography and postcolonial geology, but was also transformed into a conceptual conduit for the construction of the politically potent and hybrid Vedic-Harappan identity. I trace the discursive history of the Saraswati within the disciplinary formation of colonial Indology, and colonial and postcolonial science, and excavate the ideological subtext of its epistemological significance in the study of ancient India in early 21st century India.

II

The Saraswati in the Aryan-Harappan debate

Indo-European linguistics have established a formidable evidential consensus on the linguistic homogeneity of the Aryan people/race (Bryant 2003; Deshpande and Hooks 1979; Erdosy 1995; Gamqrelize and Ivanov 1995; Mallory 1989; Parpola 1988; Renfrew 1987; Thapar 2001; Trautmann 1997; Witzel 2001). However, other aspects of the Aryans remain a matter of conjecture and controversy. There is no consensus on the claim of an original Aryan homeland and an original proto Indo-European mother language (Bronkhorst and Deshpande 1999; Bryant 2003; Bryant and Patton 2005), or on theories about the dispersal and movement of the Aryan people (Anthony 1986, 1991, 1995; Lamberg-Karlovsky 1997). This uncertainty has fostered Hindutva scholarship that challenges the idea of Aryan migration into India and argues that the Aryans are indigenous to India (Danino and Nahar 1996; Deo and Kamath 1993; Elst 1999; Frawley 1994; Rajaram 1993; Rajaram and Frawley 1995; Talageri 1993). On the other hand, in the case of the Harappans, there is a sizeable archaeological record that provides rich evidence about their material existence, but no undisputed empirical evidence about the

language they spoke and their religious and social life. Only circumstantial evidence is available which has led to a large scholarship based on assumptions and conjecture (for instance, Atre 1987; Jacobson 1986; Parpola 1993; Rao 1982). The weak empirical nature of archaeological evidence has provided easy fodder for Hindutva narratives about Harappan archaeology (for example, Bisht 1999; Gupta 1995, 1996; Kalyanaraman 1999; Lal 1998, 2002b), facilitating the creation of a new archaeo-ethnic category—the Vedic Harappans—that combines the literary description of the Vedic texts with the vast material culture of the Harappan civilisation (Singh 1995).

Accounts of ancient India produced in the 19th and early 20th century centred around the Indo-European Aryans. Colonial Indologists had created a historical narrative attributing to Aryans the birth of Indian civilisation. From William Jones' influential work in 1786, which proposed the notion of the 'Aryan race' and 'Indo-European linguistics,' until the discovery of the Harappan civilisation, it was widely believed that the Aryans entered India from the west and inhabited the subcontinent for the first time. By the 1920s, the Aryan theory of racial intrusion had been buttressed by more than a century of comparative philology and ethnology. The fundamental assertion of this theory was that the Aryans were a superior racial group that occupied the river valleys of north-western India and the Gangetic plains by vanquishing the weaker indigenous tribes and creating colonies. However, the date of the arrival of the Aryans is an exploratory area of scholarship principally based on a philological analysis of the internal structure of the Rig Veda. We do not have any absolute dates; only relative dates are available and these fluctuate between 1700 BCE and 1100 BCE (Bryant 2001: 266). It is widely assumed that, around this time, the authors of the Rig Veda were in the geographical area of the *Sapta-Sindhu*—the land of seven rivers geographically located in north-western India in the Punjab. Therefore the period between 1700 BCE and 1300 BCE becomes significant because it is only within this small time slot that the Harappans and the Aryans could have overlapped.²

² Harappan chronology and categorisation is not fixed. However, there is a consensus that there were three major periods or phases. The first was the Early Harappans (3300–2600 BCE), followed by the most discernible Mature Harappans (2600–1900 BCE) and finally, the Late Harappans (1900–1300 BCE). The period of overlap between the Aryans and the Harappans is supposedly the Late Harappans.

It was the archaeologist Mortimer Wheeler who attempted to fix this contact, albeit envisioning it as a violent confrontation. This revived Gordon Childe's 1926 theory that the 'Aryans were just the destroyers of the newly discovered [Harappan] culture' (Childe 1926: 34). Wheeler's conclusions were based upon the analysis of skeletons found in Cemetery H in Harappa. His claims seemed objective and definitive for he was able to marshal not only archaeological evidence but also to successfully employ anthropometric criteria to reinforce his proposition. The argument for anthropometric similarities between the skeletal remains in Mohenjodaro and the southern Indian Dravidian 'race' gained legitimacy, giving rise to the theory of the Dravidian origin of the Harappans. Both these theories attempted to provide a scientific bulwark to the narrative of the invading Aryans in their horses and chariots who decimated the Dravidians and pushed them southward. Wheeler's theory was subsequently discredited (Dales 1964; Kennedy 1994) and the narrative of Aryan invasion was toned down into the idea of Aryan migration—a diffusion model of migrating Aryans interacting with indigenous settlers.

In addition to debates about the exact moment of interaction and its sociopolitical character, the question of the physical location of contact has been at the centre of the Aryan-Harappan debate. It is here that the river Saraswati comes into play. Until 1947, the major archaeological sites of the Harappan civilisation had been chiefly located on the banks of the river Indus; however, following extensive exploratory work in Haryana, Rajasthan and Gujarat, more than 1400 sites were discovered in India by the 1990s (Thakran 2000). All these sites were at a considerable distance from the catchment area of the Indus (200 to 500 km away) and were located in the arid zones of Saurashtra and Kutch in Gujarat and the semi-arid region of northern Rajasthan and Haryana in India and Bahawalpur in Pakistan. Large clusters of these sites were situated on the dry paleochannels of the Ghaggar-Hakra rivers in India and Pakistan. It is this monsoon-fed Ghaggar-Hakra that has been suggested as the terra-firma manifestation of the Saraswati. The endeavour has been to fit the literary, social and religious imagination of the Vedic Aryans with the monumental material manifestations of the Harappans, giving birth to the category of the Vedic Harappans living on the fertile plains of the Indus and the Saraswati. These discoveries and subsequent archaeological excavations

were responsible for the birth of the idea of the Vedic Harappans and the Indus Civilisation was re-named the Indus-Saraswati Civilisation or the more sanskritised *Sindhu Saraswati Sabhyata*.³

III

Colonial Indology and the birth of the Saraswati

For the seers of the Rig Veda, the river Saraswati was *ambitame, naditame, devitame*—‘the best of mothers, the best of rivers, and the best of goddesses’ (RV II.41.16). The term Saraswati epitomised both a riverine body and a magnanimous feminine divinity—a polysemic characterisation that in the complex etymological universe of Vedic Sanskrit has multiple meanings and connotations depending on the context of the usage. One frequency analysis showed that the term Saraswati occurs around sixty-eight times in the Rig Veda, fifteen times more than the frequency of the term Sindhu (Singh 1998). Eloquently and evocatively described in the Rig Veda as a grandiose river, the Saraswati is often referred to as that water body that rushed from the mountains to the ocean (Gupta 2001: 30). The later Vedic texts attest to the disappearance of the mighty river. For instance, in texts like the *Satapatha Brahmana*, *Aitareya Brahmana* and the *Jaiminiya Brahmana*, the magnificent Saraswati of the Rig Veda is described as a vanishing river which had shrunk in size and virtually disappeared. In the Mahabharata, the river is described as drying up in a desert. In later Puranic lore, the Saraswati is referred to as a subterranean river that eventually resurfaces at the *triveni sangam* in present-day Allahabad, where two of the most sacred rivers of Hinduism merge—the Ganga and the Yamuna. Within the multivalent mythological universe of Hindu cosmology, Saraswati was far more than her riverine avatars. In the Rig Veda, in association with Indra, she killed *Vritraasura* (RV VI.61) who hoarded the earth’s waters and was often

³ John Marshall, Director General of the ASI (1902–1928), had earlier used the term ‘Indo-Sumerian’ to signal the cultural relationship between the Indus and the Sumerians. However, in 1931, he adopted the term ‘Indus civilisation’. Ernst Mackay who had excavated both Mohenjodaro and Chanhudaro called it ‘Harappa Culture’, following the archaeological type-site convention of naming a culture/civilisation by the site where it was discovered for the first time (Mackay 1943). This term was subsequently made popular by Stuart Piggot in his *Prehistoric India to 1000 B.C* (Piggot 1950).

seen as an equivalent to other Vedic goddesses such as Vak, Savitri and Gayatri. In Puranic lore, she is the wife of Brahma and is the heavenly representation of intelligence, consciousness, cosmic knowledge, creativity, education, enlightenment, music, the arts and power. Within the heterogeneous universe of pre-modern Hinduism (from the Vedic to the Tantric), Saraswati, like most figures of the celestial pantheon, was a polysemic divinity having manifold manifestations and not existing exclusively as a vanishing riverine body. However, the genealogy of her essentialisation as a hydrological entity can be traced to the epistemologies of 19th century Indology and colonial cartography within the ‘inscription field’ of colonial modernity.

For Bruno Latour, inscription ‘refers to all the types of transformations through which an entity becomes materialised into a sign, an archive, a document, a piece of paper, a trace’ (Latour 1999: 306). Latour persuasively shows that scientific knowledge is produced through a ‘cascade of inscriptions’ in the laboratory and/or in the field to be eventually ossified as empirical evidence in the pages of journals and books (Latour and Woolgar 1986; also see Latour 1987, 1999). Latour argues that it is at this discursive location that rhetoric stripped of its various modalities is reified into a fact, which is ‘nothing but a statement with no modality ...and no trace of authorship’ (Latour and Woolgar 1986: 82). Throughout the 19th century, the inscription field of colonial epistemology consisted of a small group of journals along with books about India being published in Calcutta, Bombay, Madras and London. Almost all administrator-scholars of early colonial India in the late 18th and early 19th century published in the *Asiatick Researches*—the prestigious journal of the Asiatic Society, first issued in 1788 and widely circulated in Europe soon after (Trautmann 1997: 29). *Asiatick Researches* was modelled as the journal of a learned society of colonial gentlemen and published papers of extraordinary diversity. Cartographers, linguists, archaeologists, surveyors, doctors, biologists, botanists, physicists, travellers, numismatians, ethnologists and philologists came together in the *Asiatick Researches* to form the spheres of colonial epistemology. It is in this inscription field that Saraswati as a geographic entity surfaced.

The search for this ‘lost river’ began with the interpretation of the much-celebrated *nadi-sukta* (RV: X.75) by a French Indologist, M. Viven de Saint-Martin, who in 1860 suggested that this hymn ‘must have been

composed, or technically *seen* (revealed), after the arrival of the Vedic Aryans on the banks of the Saraswati' (Thomas 1883: 363, italics in the original). The notion of the river as a physical geological body occurred as a literary insight within the disciplinary discourse of colonial epistemology. The topographic interpretation of Vedic literature in order to construct a sacred geography of ancient India was of considerable interest to colonial Indologists in the early 19th century as, one after another, Vedic and Puranic texts were being translated into European languages (Dirks 1993; Dodson 2007; Wagoner 2003). By the late 19th century, articles about the 'lost river of the Indian desert' made appearances in the inscription universe of colonial scholarship. Hypotheses about various dry riverbeds in western India being the Rig-Vedic Saraswati were being postulated (MacLagan 1885; Nearchus 1875; Oldham 1889, 1893; Raverty 1892). The discussion in these articles was centred on the paleochannels of the rivers Ghaggar, Hakra, Sotra and Nara and their hydrological relationship to the rivers Indus, Yamuna and Sutlej in the present regions of Sindh, the Punjab, Haryana and Rajasthan. For instance, C.F. Oldham in his 1874 article 'Notes on the Lost River of the Indian Desert' argues that it is the Sutlej and not the Ghaggar or the Saraswati that is the lost river of the desert (Oldham 1874: 27), whereas in a later article he put forward the Ghaggar as the Rig Vedic Saraswati (Oldham 1893: 76). Nearchus in his 'The Lost River of the Indian Desert' talks of a mythic river called Marut Bredha (Nearchus 1875: 351) and suggests that this river did not reach the sea but ended its course in the Indus (ibid.: 323). While most of these articles provided incongruent views, a general consensus seemed to be that the Ghaggar-Hakra riverbed system must have been a formidable hydrological body when the Aryans arrived; however the association with the Rig-Vedic Saraswati was, at best, speculative in these articles.

IV

Archeology and the reconfiguration of the Saraswati

By 1905, colonial archaeology in the form of the Archaeological Survey of India within Lord Curzon's larger vision of India as 'a single scientific enterprise' (Arnold 2000: 137) had transformed into a formidable organisation of colonial governmentality. The ASI was involved not only with the methodical conservation of Indian heritage but it also embarked

upon the scientific excavation of archaeological sites. In the early 20th century, the ASI was a bureaucratic conglomerate of the various investigative modalities of the colonial government—observational/travel, enumerative, museological and surveillance (Cohn 1996: 3–16). On the one hand, the ASI was an instrument of survey that scientifically discovered, excavated and classified India's past and, on the other, it was an agency that provided empirical evidence for the construction of an ideological history of India's past through the analysis of architectural remains, epigraphical inscriptions and archaeological excavations. The discovery of the Indus civilisation in 1924 under John Marshall, the Director General of the ASI (1902–28), was a product of the Indological imagination of colonial scholarship, the developing scientific framework and the bureaucratic efficacy of the colonial ASI.

This discovery sidelined scholarly interest in the Aryans and the Vedic period as colonial archaeologists focused on correlating Harappan material culture with other western Bronze Age civilisations. Instead of the Aryans, the Harappans became the new ethnic link between India and the West. For example, Rakhaldas Banerji, the discoverer of Mohenjodaro, was comparing artefacts found in Mohenjodaro with Minoan artefacts in 1923 (Lahiri 2005). Within weeks of the publication of Marshall's discovery, it seemed certain that the Harappans were in contact with the Mesopotamian civilisation (Marshall 1924, 1931). The Aryans, who colonial Indologists had politically subsumed within their racial ideology (Trautmann 1997), were further eclipsed because in the public imagination of a nation resisting colonial domination, the Harappan civilisation provided India with a chronology that predated the Aryans by at least a millennium. Evidentially, the historicity of narratives in Sanskrit literature had always seemed questionable. More often than not, Greek sources—literary and numismatic—were used to delineate the chronology of ancient India. Thus, the discovery of a formidable archaeological record of the Harappan civilisation eclipsed the already suspect historicity of Sanskrit literature and consequently diminished the scholarly obsession with the Aryans without altogether obliterating it.

However, the Saraswati had not completely disappeared from the world of Indological scholarship. In 1927, a German scholar of Indo-Iranian languages argued that the term *Saraswati* was a cognate of old Iranian *Harahuvatii* and referred to a cosmological water divinity *Aredvi Sura Anahita* in the *Avesta* (Lommel 1927, 1954). This led to the

identification of *Harahuvati* with the river Helmand in Afghanistan and by default to the Saraswati. This hypothesis did not find many takers, for the Helmand does not enter the sea, but drains into a marshy area—nonetheless it is still a theory that is ardently pursued by some (Kochhar 1999). In 1942, Sir Aurel Stein, a British political agent, explorer, philologist and archaeologist, who had been associated with the ASI since the late 19th century and had conducted extensive archaeological explorations in western India and Afghanistan, declared that the Ghaggar-Hakra paleo-channel was indeed the Saraswati (Stein 1942: 182, 1988). With this assertion began the next phase of correlations of dry riverbeds with the Saraswati.

In 1924, when Marshall came across the first archaeological evidence of material culture at Harappa and Mohenjo-Daro, he located these two sites within the hydrological realm of the Indus, thereby positing a river as the centre of the civilisation. Like his fellow archaeologists of the time in Mesopotamia and Egypt, he interpreted the archaeological finds at Harappa and Mohenjodaro as a civilisation within the fluvial confines of a riverbed. The Indus was to the Harappan civilisation what the Nile and the Euphrates were to the Egyptian and Mesopotamian civilisations, respectively. The river was central to this civilisational imagination along with writing, monumental architecture, urbanism, fortifications, long-distance trade, craft specialisation and social stratification (see Adams 1960; Braidwood 1952; Childe 1950; Kroeber and Kluckhohn 1952). But the unquestioned domination of the Indus as the centre of the Harappan civilisation was challenged by the discovery between the 1950s and 1970s of Harappan sites that lay far beyond the Indus basin both in India and Pakistan. Till 1947, less than forty Harappan sites were known (Wheeler 1953: 95–96), of which only two were in India—Kotla Nihang Khan in the Punjab and Rangpur in Gujarat (both of which were excavated by the ASI in 1929–30 and 1934–35, respectively), but this was soon to change.

The partition of South Asia forced the ASI to re-evaluate the archaeological heritage that came under its purview. By 1948, the ASI had relinquished jurisdiction of a substantial portion of the Old Frontier Circle, covering the entire region of erstwhile West Pakistan and parts of its Eastern Circle, comprising areas in East Pakistan. Furthermore, the loss of Harappa and Mohenjodaro represented the biggest blow to the organisational morale of the postcolonial ASI, since these sites had constituted

the professional core of the ASI in the last decades of its colonial legacy. However, by the early 1950s, the ASI began a systematic exploration of the western states of independent India (Ghosh 1952, 1956, 1959; Thakran 2000: 48). This exploration was a follow-up to Stein's work and was meant to compensate for the loss of nearly all the Harappan sites to Pakistan and re-establish the pre-eminence of post-Independence India as an ancient civilisation. Significantly, Rafique Mughal's exploration in eastern Pakistan adjoining the Thar desert on the bed of the Hakra along with the discovery of Harappan sites in Baluchistan and western Pakistan was also responsible for this shift (Mughal 1992, 1997). These discoveries, along with the excavations of the Harappan sites of Lothal, Kalibangan, Surkotada, Bhagwanpura and Banawali over the decades by the ASI as well as the excavations of Harappa, Kot Diji, Mehrgarh, Nausharo and Sutkagan Dor in Pakistan, further undermined the thesis of the Indus as the hydrological centre of the Harappan civilisation. By 1984, 1400 Harappan sites were discovered due to the extensive exploration efforts of the Archaeological Survey of India, the Departments of Ancient Indian History, Culture and Archaeology at the Universities of Kurukshetra and Baroda, Deccan College (Pune) and the State Department of Archaeology in Gujarat (Misra 1994: 511) along with independent scholars (Bhan 1972; Ram 1972; Singh 1981). These discoveries, while restoring the losses of Partition, also shifted the locus of the Harappan civilisation away from the Indus valley to a larger geographic area as far as the Gangetic plains in the east to Saurashtra in the south. The Indus had lost its pre-eminence as the riverine centre of the Harappan civilisation. Soon, the Ghaggar-Hakra as the Saraswati was being promoted as the coeval hydrological centre of the civilisation. This occurred with the discursive intervention of another postcolonial science—geology—equipped with a powerful technique of representation—'Landsat' satellite imagery.

V

Postcolonial geology and the birth of the hydrological Saraswati

The work of postcolonial geologists—some attached to the Geological Survey of India, others to university departments in India—in analysing remote-sensing satellite data and in paleo-climatic and paleo-seismic

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research led to scientific claims establishing the correlation between the Ghaggar-Hakra and the Saraswati as an empirical fact. In 1979, invoking the *nadi-sukta* and earlier hypotheses from Oldham to Stein, a group of geologists interpreted remote-sensing images taken during 1972–77. These were ‘Landsat’ satellite images that provide synoptic multi-spectral and multi-temporal data and have powerful scientific legitimacy. These were composite images which showed paleo-channels in western South Asia from the Siwaliks to the Rann of Kutch. Paleo-channels are ancient streams and rivulets that are monsoon-fed and on the surface are usually disconnected with contemporary water bodies. These channels have been traced by satellite and the resultant digital images processed to categorise paleo-channels in northwest India and adjoining parts of Pakistan (see Bakliwal and Grover 1988; Bakliwal and Sharma 1980; Ghose, Kar and Hussain 1979, 1980; Kar 1983, 1989, 1994, 1998 1999; Kar and Ghose 1984; Puri 2001; Raghav and Grover 1991; Radhakrishna and Merh 1999; Rajawat, Sastry and Narain 1999; Ramasamy 1999; Ramasamy, Bakliwal and Verma 1991; Roy and Jhakar 2001; Sahai et al. 1993; Sharma, Srivivasan and Dhabriya 1992; Snelgrove 1979; Sood and Sahai 1983; Yashpal, Sood and Agarwal 1980). They vigorously attempted to validate the century-old speculation that the Ghaggar-Hakra had indeed been a large river and argued that the paleo-channels of the Rig Vedic Saraswati coincided with the bed of the present-day Ghaggar. They postulated that the Sutlej and the Yamuna were the main tributaries of the Ghaggar and that subsequent tectonic movements might have forced the Sutlej westwards and the Yamuna eastwards, causing the Ghaggar to dry up.

However, on closer reading of the papers published by this community of scholars, it seems that there were contradictory claims circulating, not just about the origin of the river, but also its nature. The most exaggerated of these studies painted a picture of the river as dynamic and powerful, similar to that described exuberantly in the Rig Veda. Like its mythical incarnation, the geological entity flowed from the Siwalik Hills at the edge of the Himalayas and through the Punjab, Haryana, northern Rajasthan, through the Thar desert in Pakistan, and finally entered the sea at the Rann of Kutch. Some argued that the Ghaggar-Hakra was a perennial river (Puri 2001); others said that it was fed by the Yamuna (Wilhelmy 1999 [1969]) and the Sutlej (Bakliwal and Grover 1980; Kar and Ghosh 1984); while yet others stated that the river was monsoon-fed

(Radhakrishna and Merh 1999). Theories about its demise also abound—attributing it to the changing course of the Sutlej and the Yamuna (Bakliwal and Sharma 1988), to seismic activity in the region which made it subterranean (Kar 1998, 1999; Snelgrove 1979), to its disappearance in the Kutch (Ramasamy 1999; Valdiya 2002). The only consensus seems to have been that the Ghaggar-Hakra had indeed once been a powerful paleo-hydrological body. Significantly in these studies, no conclusive evidence was presented to pinpoint when the river dried up or, importantly, if the paleo-channel finally drained into the sea or the Thar desert.

Recent paleo-climatic research has shown that the Thar had started to become arid by 4800 BCE (Enzel et al. 1999), more than a millennium before the Early Harappan phase (3300–2600 BCE). This suggests that Harappan culture must have risen and fallen in semi-arid climatic conditions similar to the present day. Another recent study of the isotopic content of the alluvium of the Ghaggar-Hakra suggests that its waters did not originate in the Himalayas, thus contesting the very idea of a perennial Saraswati (Tripathi et al. 2004). These findings fundamentally question the theories about the hydrological nature of the Ghaggar-Hakra river. They suggest that Ghaggar-Hakra may have been a powerful hydrological body when aridity had not set in the Thar (i.e. before 4800 BCE), but much before the emergence of the Harappan civilisation (3300 BCE). More research is necessary in this area of paleo-climatology and paleo-hydrology to determine the facts about the nature and demise of the Ghaggar-Hakra. Archaeological and geological research has shown beyond doubt that a significant portion of the Harappan civilisation was situated in the Ghaggar-Hakra region. But this riverbed was already dry by this time and not a mighty river, as the proponents of the Saraswati seem to argue.

It is with the intervention of the disciplinary discourse of postcolonial geology that the Saraswati emerges as a *boundary object* with a seemingly powerful empirical value and ability to move between the domains of different epistemic communities. Within information and science studies, boundary objects have been defined as epistemological entities ‘that both inhabit several communities of practice and satisfy the informational requirements of each of them. Boundary objects are thus both plastic enough to adapt to the local needs and constraints of the several parties employing them, yet robust enough to maintain a common identity across

sites' (Bowker and Star 1999: 297; also see Fujimara 1992; Star and Griesemer 1989). With the intervention of postcolonial geologists and archaeologists, the Saraswati slowly emerged as a boundary object with an intricate internal structure that allowed multi-variant agents to project complex interpretations onto it. Thus, with the rise of Hindu fundamentalism in the early 1990s and its ascendancy to power at the national level in 1998, politicians, Indologists, archaeologists and geologists who were politically invested in the idea of the Saraswati civilisation were instrumental in transforming the Saraswati from a marginal boundary object into a 'visionary' one.⁴

VI

Hindutva politics and the making of the Indus-Saraswati Civilisation

In the early decades of postcolonial India, the relationship of Hindutva ideologues with Hindu nationalism was essentially tied to history; archaeology, although part of their discursive arsenal, was still marginal. It was with the ASI's 'Archaeology of the Mahabharata Sites' project in 1950–52 that the earliest link with Hindutva ideology and archaeology can be dated. B.B. Lal, one of the most distinguished archaeologists of the ASI, who began his career at Mortimer Wheeler's famous archaeology field school at Taxila in 1944 and eventually became the Director General of the ASI (1968–1972), headed this project. Unlike 19th century excavations of sites mentioned in Chinese travel literature by Alexander Cunningham (Imam 1966) which had unambiguous historical origins, Lal explicitly attempted to correlate events and sites mentioned in the epic to archaeological excavations at Hastinapura and explorations of Mathura, Kurukshetra, Banawa, Panipat, Ahichchhatra and other places (Lal 1954, 2002a). This led him to the controversial assertion that the pre-Buddhist Painted Grey Ware (PGW) found at these sites was associated with the Mahabharata (Bhan 1997; Habib 1997; Lal 1978). Painted

⁴ A type of epistemic entity, visionary objects are defined as 'conceptual objects that have high levels of legitimacy within a particular community. They can evoke similar emotive and affective responses from a wide spectrum of people, possessing a sacred quality that makes it difficult for a "rational" person to be against them' (Briers and Chua 2001: 242).

Grey Ware was identified in Ahichchhatra in 1946 and it was during the Hastinapur excavation that it was culturally interpreted. B.B. Lal emphatically correlated PGW with Period II in Hastinapur, thereby controversially pushing the date of the events in the Mahabharata to 1000 BCE (Lal 1954: 151). However, in his conclusion to the excavation report of the Hastinapur Excavation published in *Ancient India*, he notes with caution 'that the evidence is entirely circumstantial and until and unless positive ethnographic and epigraphic proofs are obtained to substantiate the conclusions they cannot but be considered provisional' (ibid.). Lal's project was driven by the faulty logic of correlating material culture—PGW—with ethnicity—Aryan (Bhan 1997; Habib 1997). In keeping with the practice of cultural-history archaeologists, Lal's effort mimicked Wheeler's equally problematic correlation between the material culture of Cemetery H at Harappa and the notion of invading hordes of Aryans. Again headed by B.B. Lal and motivated by the same concerns, a joint project of the ASI and the Indian Institute of Advanced Studies, Shimla, on the 'Archaeology of the Ramayana Sites' followed the Mahabharata project between 1975–80, with excavations at Ayodhya, Sringerapur and Nandigrama (Lal 1980; Mitra 1983: 76; Thapar 1980: 52). The epistemic logic for both these projects was to employ the objective authority of scientific archaeology to legitimise the historicity of the epic traditions and to establish the Sanskrit past as empirical fact. The possibility of transforming a mythological Sanskrit literary universe into an empirical reality, materially located in the geographic territoriality of India, justified archaeology's role among Hindutva ideologues. Although these two projects were not framed within Hindutva logic, they were appropriated in the 1980s by the rise of Hindutva politics, especially in the case of the Ram Janmabhoomi-Babri Masjid controversy. The reinvention of the Bharatiya Jan Sangh as the Bharatiya Janata Party (BJP) and its coming to power as part of the Janata Party coalition was contemporaneous with the excavations at Ayodhya by B.B. Lal between 1976–77 and 1979–80. The Sangh Parivar-led Ram Janmabhoomi movement in the 1980s successfully employed B.B. Lal's controversial claim of a destroyed temple under the Babri Masjid. With it, the project of Hindutva's epistemological appropriation of archaeology's discursive legitimacy to pursue its divisive politics reached its logical conclusion on 6 December 1992.

It is around the late 1980s, with the rise of political Hindutva, that historians and archaeologists closely associated with Hindutva ideology

initiated the project of the 'Aryanization of the Indus Civilization' (Bhan 1997: 13, 2001; Guha 2005; Thakaran 2000: 62). A symposium was organised by the Deen Dayal Research Institute and Voice of India (active arms of the Sangh Parivar) in New Delhi in 1993 to take the project firmly into the public sphere of the Indian polity (Bhan 1997: 13–14).⁵ This project argued against the migration of the Aryans from the west and asserted that the Harappans were Vedic Aryans (Elst 1999; Gupta 1996; Lal 2002a; Rajaram 1995; Singh 1995; Talageri 2000). The hydrological centre of this process of 'Aryanisation'—the practice of reading Aryan elements in Harappan material culture (Thakaran 2000: 56–64; also see Bhan 2001)—was the river Saraswati which, by this time, as I have shown above, had moved from the mythological to the archaeological realm, its epistemic valence made more powerful by the assertions of postcolonial geological sciences.

In this stage, the Saraswati was transformed from a *boundary object* to a *visionary object*. This occurred through Hindutva's appropriation of archaeology to push its ideological agenda. Overwhelmed by the seeming hydrological validation of the Saraswati, as well as the high concentration of Harappan sites in the Ghaggar-Hakra region, archaeologists sympathetic to the Hindutva cause provocatively argued that it was the Saraswati rather than the Indus that was the centre of the Harappan

⁵ A statement emanating from the conference was reflected in the editorial of the RSS magazine *Manthan* (15 (2–3), April–September, 1994), which unequivocally stated: 'The Aryan Race and Invasion Theory is not a subject of academic interest only; rather it conditions our perceptions of India's historical evolution, the sources of our culture and socio-economic political institutions. Consequently, it has a strong bearing on the contemporary Indian politics as well as the future of Indian nationalism ... almost all the current dis-integrative and separatist movements—whether regional or casteist in character—have their intellectual root in this Aryan Race and Invasion Theory ... [T]he issue assumes importance because it is a question relating to the origins of our culture. In fact our identity depends on it ... [N]ow with the discovery of the lost track of the Rigvedic river Saraswati, the excavation of a chain of Harappan sites from Ropar in the Punjab to Lothal and Dholavira in Gujarat all along this lost track, the discovery of the archaeological remains of Vedic Yupas connected with Vedic Yajnas at Harappan sites like Kalibangan, decipherment of the Harappan script by many scholars as a language of the Sanskrit family... the discovery of the lost Dwarka city beneath the sea water near Gujarat coast and its similarity with Harappan civilisation, all these new discoveries establishing full identity of the Harappan civilisation with Vedic civilisation, demand a re-examination of Aryan Race and Invasion Theory' (quoted in Bhan 1997: 13–14).

civilisation (Bisht 1999, 2006; Gupta 1995, 1996, 2001; Joshi 1984; Kalyanraman 1999; Lal 1997, 1998, 2002a; Misra 1994). These discoveries, along with archaeological excavations of the Harappan sites at Rupar (1954–55), Lothal (1954–63), Kalibangan (1960–69), Surkotada (1964–68), Bhagwanpura (1975–76), Banawali (1974–77), Kunal (1985–86, 1991–95), Rakhigarhi (1997–2000) and Dholavira (1990–2004), re-kindled the debate about the existence of the Vedic Harappans. The presence of horse bones in Surkotada (Sharma 1990);⁶ the interpretation of the Harappan fire hearth as the Vedic fire-altar at Kalibangan (Lal 1984; Lal et al. 2003), Lothal (Rao 1985) and Banawali (Lal 2002a); the representation of spoke wheels on terracotta toys in Kalibangan and Banawali (Lal 2002a; Rao 2006) along with several alleged decipherments of the Harappan script as proto-Sanskrit (Jha and Rajaram 2000; Rao 1982; Shendge 1977) were all taken to strengthen the theory of the Vedic Harappans. This theory of the Vedic Harappans, coupled with the rejection of the theory of Aryan invasion, the discoveries of Harappan sites in the Ghaggar-Hakra region—contributed to the gradual emergence of the Indus-Saraswati Civilisation as an unquestionable factual reality. Alongside, the absence of a credible and unifying explanation for the collapse of the Harappan civilisation (c. 1600–1300 BCE) provided a fertile gap into which the possibility of Vedic and Harappan overlap was inserted. Incestuous citing practices on the part of geologists and archaeologists supportive of the Hindutva cause created a perception that the Ghaggar-Hakra was indeed the Saraswati River and that it could be treated as an objective scientific fact.⁷ Soon, even archaeologists who were not part of the Hindutva ideological formation were convinced by these rhetorical moves and began calling the Harappan civilisation the Indus-Saraswati Civilisation (for example, see Kenoyer 1997: 57; Possehl 2002: 36).

⁶ The occurrence of the horse has a conjectural association with the arrival of Aryans in India. Thus Sharma's claim of the presences of their faunal remains in Surkotada has been regarded as evidence for the Vedic Harappans. However, this claim has been challenged by Meadow who has argued that prevailing evidence in India does not suggest the presence of the domesticated horse before 1000–700 BCE (Meadow and Patel 1996).

⁷ See Radhakrishna and Merh (1999), along with issues of journals like *Man and Environment* and *Puratattva* from the late 1980s to early 2000s where scholars, geologists, archaeologists and unambiguous Hindutva ideologues (David Frawley, Koenraad Elst, Navaratna S. Rajaram, Bhagwan Singh, Michel Danino and others) through incestuous citations were involved with making the Saraswati River an unquestionable fact.

VII *The Saraswati Heritage Project*

Officially, the Saraswati Heritage Project (SHP) was initiated in 2002 by the ASI through a Government of India Gazette notification leading to the constitution of the Advisory Committee for the Multidisciplinary Study of River Saraswati, under the chairmanship of the then Minister of Tourism and Culture, Jagmohan. The project was aimed at 'conducting a multidisciplinary study of River Saraswati and its basin stretching in India from the Sivaliks to the Arabian Sea, falling in the Indian states of Haryana, Rajasthan, and Gujarat, and formulating and implementing integrated development programmes (sic) in the area by creating 15 hub sites as centres of culture, tourism, and good civic life' (Basu 2005: 11). Headed by the Joint Director General of the ASI, the project not only included archaeological investigations but also geomorphological, geotechnological, hydrological, ethnological, paleo-botanical, paleontological and pedological studies and a detailed analysis of historical literature and oral traditions (ibid.). In September 2002, the Advisory Committee prepared a project proposal for the SHP with a budget of ₹ 360 million but this was eventually reduced to ₹ 49.8 million for a period of three years (ibid.). For excavation and exploration, the SHP was largely planning to harness the existing resources of the ASI. Initially, the excavation was proposed at the prospective sites for a period of three years with a total budget outlay of ₹ 17.6 million.

The Saraswati Heritage Project was a product of the ASI's direct intervention in the attempt to legitimise the objectivity of the Indus-Saraswati Civilisation. The SHP was conceived as not only an academic project. In order to justify funding from the Ministry of Tourism and Culture, the project supplemented its research programme with a proposed transformation of fifteen archaeological sites into tourist attractions under the plan of 'Integrated Development of the Tourism Circuit from Adi Badri to Dholavira'. Of these, some of the hub sites like Thanesar, Rakhigarhi, Banawali, Adi Badri, Aghora, Dholavira, Rangmahal and Kalibangan had been previously excavated; Sirsa, Kalyat, Hanumangarh, Narayan Sarovar were local historic sites; whereas fresh large-scale excavations were planned at the sites of Chak 86, Tarkhanwala Dhera, Baror, Hansi, Bhirana and Juni Kuran. Jagmohan, the then Minister for Tourism and Culture under whose tenure the SHP was initiated, had inserted the

SHP under his ₹ 3000 million ‘Regeneration India’ project, aimed at boosting ‘cultural and spiritual tourism’ in India to exploit the domestic market. However, at the heart of the SHP was a political project couched in academic, cultural and tourist rhetoric—designed not only to celebrate the Indian cultural landscape, but to establish the empirical basis of the Saraswati’s material manifestation. The central objective of the project was to produce credible data of *indigeneity* in order to scientifically demonstrate that the Rig Vedic Aryans were the authors of the Harappan civilisation. What was significant about the SHP was that, for the first time, a state-sponsored project was instrumental in trying to investigate the relationship between the Ghaggar-Hakra, Harappan culture and Rig Vedic literature, under the hydrological rubric of the Saraswati River. Senior archaeologists of the ASI, mostly retired and some still serving, who had earlier articulated the idea of Vedic Harappans, were at the forefront of the conceptualisation of the SHP and were members of the ASI-instituted Advisory Committee for the Multidisciplinary Study of River Saraswati. Some of these members had intimate connections with the Hindutva movement. Thus even before excavations began in 2003, the SHP was embroiled in controversies about the ideological impetus of the project (Guha 2005; Habib 2001; Mukherjee 2001; Thakaran 2000). This role of the ASI and the government turned the SHP into a politically potent project and this was eventually the reason for its premature end.

The excavations under the SHP lasted only for one season (2003–04) when the National Democratic Alliance (NDA), under the leadership of the Hindu nationalist BJP was in power. In the general election in the summer of 2004, the NDA was defeated and the United Progressive Alliance (UPA), under the leadership of the centrist Congress and the support of the Left parties, came to power. During the BJP’s tenure, the SHP had been criticised by archaeologists and scholars who were not sympathetic to its political subtext; among these were prominent scholars who were close to the Left parties (Basu 2005). A ‘high powered’ Parliamentary Committee was set up when the UPA government came to power in 2004 with the explicit aim of investigating the working of the ASI (*ibid.*). This committee, formed at the behest of the Left parties who were a significant partner of the UPA government, had the implicit aim of investigating the SHP. The 91st Report of the Department-related Parliamentary Standing Committee of Transport, Tourism and Culture

devoted to the functioning of the ASI, severely indicted the organisation about the SHP and advised that the ASI 'should prevent itself from taking up exercises without a scientific basis which have all potentiality for subjective interpretation of historical facts thereby leading to controversies' (ibid.: 13). Jaipal Reddy, the first Minister of Tourism and Culture under the UPA government, officially scrapped the SHP by the end of 2004 and the funding was cut. Thus for the season 2004–05, excavations ceased at the sites of Chak 86, Tarkhanwala Dhera (Trivedi and Patnaik 2004) and Juni Kuran (Pramanik 2004)—sites which were being excavated by the ASI's Bhubaneshwar Excavation Branch and Vadodara Excavation Branch, respectively. However, Nagpur Excavation Branch, Delhi Excavation Branch and Patna Excavation Branch continued excavations at Bhirrana (Rao et al. 2004, 2005), Hansi and Baror (Sant et al. 2004), respectively, for the season 2004–05. Although the SHP as a political project of the ASI met with an untimely end, its historical and ideological foundations have not withered; they still continue to occupy a significant space in the archaeological imagination of ancient India.

VIII

Conclusion

This article has attempted to delineate a critical genealogy of the Saraswati's transformation from an affective, religious substratum into an empirical entity. By tracing the discursive history of the Saraswati within the disciplinary formation of colonial Indology and postcolonial science, this article has outlined the history of an epistemic object and uncovered the ideological, political and modernistic subtext that has contributed to its making. The trajectory from a literary and mythological figure to an epistemic category shifting between the multiple disciplinary boundaries of hydrology, geology, paleo-climatology, geomorphology and archaeology has been an ideological outcome of colonial Indology and postcolonial science. By employing the heuristic of science studies to reveal the epistemological trajectory of the Saraswati as a boundary object and subsequently as a visionary object, this article shows the pre-eminence of science rather than political subversion in the process of knowledge production. It argues that it is important not to isolate the Saraswati as solely a product of Hindutva ideology but to locate its emergence as a contemporary epistemological category having considerable

political, cultural and scientific value. By situating the genealogy of the Saraswati in the rise of modern science in colonial and postcolonial India rather than in the appropriative machinations of Hindutva politics, this article attempts to shift the debate on the politics of the past in India. This work contends that, rather than focusing on the political ideology of knowledge production about the past in India, it is imperative to investigate the disciplinary discourse about colonial and postcolonial epistemology that produces that very past. Although it is impossible to undermine the political and ideological genealogies of knowledge production about ancient India, it is imperative to alter the scholarly gaze to the very epistemological framework that produces these fractious narratives.

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