What do spatial approaches to the history of archaeology tell us? Insights from post-colonial India

¿Qué nos dicen los métodos espaciales sobre la historia de la arqueologia? Apuntes desde la India post-colonial

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Abstract

Archaeologists increasingly find themselves confronting members of local communities, raising the question: who owns cultural heritage and the interpretation of archaeological data? In this paper I introduce geographic information systems as a method to gain insight on archaeology. I argue that visualizing where and when archaeologists carried out fieldwork is a first step to understand how and why social tensions emerge and to address what we have yet to know. Through the case of post-colonial India, I present innovative spatial approaches to the history of recent archaeology and aim to create the conceptual space to understand how societal factors such as political instability and social unrest, national styles of science, competing research traditions and culture influenced Indian archaeology.

Key words: *GIS. Geovisualization. Archaeological fieldwork. History of Archaeology. Post-colonial India. Babri Masjid.*

Resumen

En los últimos años, los arqueólogos han tenido que enfrentarse a un dilema fundamental relacionado con comunidades locales: ¿A quién pertenece el patrimonio arqueológico y la interpretación de los datos arqueológicos? En este artículo, utilizo sistemas de información geográfica para tratar de dar una respuesta a esta cuestión. En particular, argumento que examinar dónde y cuándo los arqueólogos han llevado a cabo su trabajo de campo es un primer paso para comprender cómo y por qué determinadas tensiones sociales emergen. Tomando como ejemplo el caso de la India post-colonial, en este articulo utilizo enfoques espaciales innovadores con el objetivo de demostrar que dichos métodos pueden ayudar a comprender cómo determinados factores sociales (tales como la inestabilidad política y social), los diferentes estilos nacionales de ciencia y las diferentes tradiciones culturales han influido la práctica de la arqueología en India.

Palabras clave: *SIG. Geovisualización. Trabajo de campo. Historia de la arqueologia. India Post-colonial. Babri Masjid.*

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1. Introduction

The year 2012 marked twenty years since the infamous razing of the Babri Masjid, a medieval mosque in the northern city of Ayodhya, and the loss of human life in its wake. On 6 December 1992, *kar sevaks*[1] (Hindu volunteers) assembled at the Babri Masjid with one mission – to tear down the mosque. The *kar sevaks* believed that beneath the standing mosque there lay the remains of an ancient temple and that invaders had denied a glorious Hindu past. They believed there was an historical cultural continuity in the birthland of Hinduism and that tearing the mosque down was the only way to right the injustices of the past and to restore the dignity of Hindus in present day India. By the end of the day, *kar sevaks* had brought down the mosque. Riots following the demolition resulted in the loss of human life in Ayodhya and elsewhere in India.

Reacting to the civil unrest, the Government of India took possession of the grounds on which the mosque had stood. Amid these heightened tensions, local organizers of the World Archaeological Congress, to be held in New Delhi in 1994, raised the ante by announcing that the congress meetings would be "strictly academic" and would "keep out of politics", thus barring discussion on the Babri Masjid (Golson 1995: 52). The Allahabad High Court, which was assigned the challenge of establishing ownership of the grounds, called upon the expertise of the Archaeological Survey of India (hereafter, the Survey), which is the national department for archaeology and heritage management in India. Since the demolition, growing numbers of interest groups have claimed ownership of the grounds, leading some archaeologists to call for a "proper archaeological investigation of this large and fortified city site" (Chakrabarti 2003a: 580). To some observers, these developments seem to point to a monolithic practice of Indian archaeology.

As is evident in histories of archaeology (Trigger 2006), we have only a partial understanding of the social context of archaeological practice and its impact on the interpretation of archaeological data. "Socio-political" approaches (Gero 1985: 343), for example, can shed light on the political uses of archaeology, including maintaining "fundamental asymmetries" and justifying economic, social and political marginalization. While these methods are fruitful, they tend to underestimate the influence of changing geopolitical interests and alliances of newly-independent states and the concurrent creation of "supranational" institutions and universal human rights in the aftermath of the end of the Second World War (Cooper 2005: 231). This oversight glosses over the ways in which foreign policy concerns of post-colonial states and the maintenance of internal social and political stability influenced the practice of archaeology in the modern world-system (Chakrabarti 2003b). A key question for the history of recent archaeology is the relationship between archaeological practices that developed in Europe and those that developed in former European colonies (Díaz-Andreu 2007). Often the *metropole* (Cohn 1996) has a unidirectional relationship with the colony, such that 'colonial science' is conceptualized in terms of the diffusion of science from Western Europe to the colonies[2] (Basalla 1967). This essentialist view gives the impression that science was unified and practiced without conflict in the colonies, and that the state alone directed scientific research in an apparent social and political vacuum. The historian of science, Mark Harrison (2005: 56) has remarked that this view overemphasizes state- and corporate- sponsored scientific work. Moreover, these views overlook the changing relationship between science and post-colonial society.

The perception of 'national archaeology' is hence one in which beliefs and values have little bearing on contemporary practices and are best understood as colonial legacies (Chakrabarti 2003b: 213). Under this model, Indian archaeology is considered a monopoly of the Government of India (Ray 2008: 246-247). These views of Indian archaeology are often accepted by Western researchers. Carla Sinopoli (2006: 327), for example, remarked that Indian archaeology was a "marginal intellectual pursuit" whose role, as a result of the conflict in Ayodhya, shifted "to a central player in debates about India's past and the nature and future of the contemporary Indian state". These views influence our understanding of events like the demolition of the Babri Masjid.

Such events draw attention to the political uses of Indian archaeology and the role of *Hindutva* (neo-Hindu nationalists; S. Guha 2005) in the razing. But what is the influence of values and beliefs on the *interpretation* of archaeological data?

In this article I introduce geographic information systems (GIS) and historical methods as a way to understand nuances in the recent history of Indian archaeology. I suggest that archaeological fieldwork forms a unique class of historical data that refers to the spatial and geopolitical attributes of sites of archaeological interest and their investigation by scientists at particular times. After a brief discussion of the practice of Indian archaeology, I offer an overview of *geographic visualization* for working with large, complex archaeological data and discuss the ways that archaeologists have used GIS. Finally,

I present insights on Indian archaeology in Babri's shadow.

Using a GIS methodology, I demonstrate that Indian archaeology has tended to be north-centric and that a state-oriented view of Indian archaeology influences scholarly discussion on the interpretation of archaeological data. In presuming a monolithic and state-oriented archaeology, the same assumptions are accepted in the interpretation of archaeological data. Although Indian scholars do not explicitly say so, Indian archaeology assumes cultural continuity between contemporary and prehistoric societies, and some archaeologists think in terms of recovering territories of historical groups.

The greatest proportion of archaeological investigations in India have been carried out in the territories along the upper Ganges River and at its confluence with the Yamuna River. Conversely, knowledge producers have conducted very few (and if so, sporadic) archaeological field studies along the lower Ganges River and in India's eastern territories. These variations in archaeological investigations show how the beliefs archaeologists hold about the world and the nature of things influence the practice of archaeology, as will be discussed more fully below. The history of archaeological practice in India offers a way to begin to understand the unthinkable loss of human life in Ayodhya that has happened. This perspective sheds light on what archaeologists in India believe and why, what matters most in Indian society and how these ideas make real impacts. In turn, this analysis gives us insight into the strengths and weaknesses of archaeology as a science.

The data for this study are from archaeological publications in scholarly journals and *Indian archaeology-a Review*, the Survey's in-house publication. The periodical documents field collection throughout India for every twelve-month period. It includes annual survey and excavation notices and edited summaries of field reports that are submitted by Indian archaeologists each fiscal year. The present study focuses on an eight-year period in the aftermath of the demolition of the Babri Masjid, from 1993 to 2000. Three knowledge producers in Indian archaeology broadly conceptualized, are the national department (Survey), university and research institutions, and state departments. Of the Indian universities and research institutes, 31 departments carried out 897 field investigations. Of the 28 Indian States and 7 Union Territories, 15 state departments conducted 1269 investigations, whereas the Survey carried out 1821 investigations. The remainder 178 investigations represented collaborative scenarios, where the Survey worked with other archaeological units, or where academic and state departments carried out fieldwork jointly (one investigation is omitted from the statistic as its investigator is currently unknown). The data set totals 4166 field investigations, comprising 3829 survey explorations and 337 excavations.

Along with the information obtained in summaries of field reports, the data set has location descriptions (district-level administrative units) for all investigations. A small proportion of the data set has geographic coordinates (latitude and longitude) for investigations. This variability presents challenges and opportunities when incorporating the information into a geographic database, as I will discuss in detail in a later section. In addition to investigation data, geographic information for India is also used in the study. This includes data on aspects of its geopolitical, administrative and hydrological system. This contextual information helps relate investigation data to the geographical setting of the region. Geoprocessing of the data is performed on ESRI's ArcGIS 9.3.

2. Characterizing the practice of Indian archaeology

Until the late 1990s, with the exception of a thirty-four-month period in the late 1970s[4], the position of prime minister in India was occupied by a member of the Indian National Congress (hereafter Congress). It was the leaders of the Congress who took over administration of India from the British Crown in 1947. The Indian political organization traces its roots to the late nineteenth century, when in 1858, amid colonial restructuring, the British Crown dissolved the East India Company and took over its Indian possessions (Bandyopadhaya 2004). Growing political awareness amongst Western-educated Indians led to the formation in 1885 of the Indian National Congress. In this milieu of rapid economic, social and political change, an Indian historiography that emphasized distinctions between and linguistic groups emerged. Indian historians conceptualized the Indian past in terms of racial groups and explained change as a result of external factors such as migration. Indian history thus was understood as a succession of migratory groups. Some Indian scholars, influenced by growing Hindu nationalism, such as Romesh Chandra Dutt (1889), renewed their interests in the Vedic texts, which they alleged were recorded memories documenting the progress of Hindu knowledge, literature and science over three thousand years, stressing cultural continuity. These views instilled in Hindus a sense of pride in their past.

The belief in the Vedic origins of Hindu civilization, a fundamental unity based on historical

origins within a territorially bound India (Chatterjee 1995: 251) hence played an important part in the "construction of a nation" (Ratnagar 2007: 351). These views of Indian society fuelled nationalist movements and were bolstered by the discovery in the 1920s of the Indus Valley civilization (Lahiri 2006). They were reflected in the 'Quit India' resolution (1942) in which the Congress demanded immediate *swaraj* (self-rule). Influenced by ideals of equality and fairness, the growing Western-educated middle class grew resentful of constraints on its civil liberties and supported the Congress in its aim for independence.

In the mid-1990s, the international community cast an unflattering light upon the Indian national government for its aggressive economic policies in the construction of hydroelectric dams on the Narmada River, which led to the displacement of tribal or aboriginal peoples (Patel 1995). Policy makers think of aboriginal peoples as unchanging cultures who are outside of Indian society (R. Guha 2007: 296). Moreover, India's well-publicized nuclear tests in 1998 renewed alarm over imminent armed conflict with Pakistan (Abraham 1998). The United States responded with swift condemnation in the form of economic sanctions (Bennet 1998). These developments are best understood in a milieu of rapid economic, social and political change.

In 1991, a few years shy of its fiftieth year of independence from the British Crown, India was rocked by growing political divisions that resulted in the assassination of former Prime Minister Rajiv Gandhi. This happened less than a decade after Sikh bodyguards had assassinated his mother, then Prime Minister Indira Gandhi. This social and political uncertainty was made more volatile by the social unrest following the loss of human life in Ayodhya. This instability influenced the role of archaeology and its practice in India.

The practice of Indian archaeology is influenced by Hindu nationalism and an ideology of fundamental Indian unity. Indian archaeologists interpret these ideas in terms of the Vedic origins of Hindu civilization and the cultural continuity between contemporary and prehistoric societies. Indian archaeologists such as Dhavalikar (2006) think in terms of recovering territories of historical groups. Where few or no historical records exist, influential scholars consider archaeology a source of history for subaltern or marginalized peoples (Ray & Sinopoli 2004: 1). Archaeological data, as Selvakumar (2010: 474) argues, can assist Indian aboriginals in claiming "traditional rights" over territories that they occupy. These methods, which promote the study of specific peoples and ethnicity (Trigger 1995) conflate culture-historical approaches and nationalism.

Influenced by Hindu nationalism, Indian scholars such as S. P. Gupta & Ramachandran (1976) believe that the Vedas are a static archive of traditions and that modern Hindu traditions in northern India are descended from them. They believe the narrative accounts in the *Mahabharata*[3] and *Ramayana* belong to The People. Scholars such as B. B. Lal (2001) argue that these texts accurately document the progress of Hindu civilization in northern India. Because these accounts refer to place names and because influential scholars believe that there has been little or no change in tradition, the texts are thought to be an accurate and static record of historical territories. Thus, all that needs to be known to understand social and political organization is the present location of specific places referred to in the Sanskrit texts (Lal 2002). These methods are used to strengthen claims made by Hindus over lands they are occupying. These views influence the practice of Indian archaeology.

In presuming a homogenous and static society, archaeologists attribute material culture to specific ethnic and linguistic groups. These groups are thought to be discrete, exclusionary and unchanging. Moreover, monolithic Hindu practices exclude all non-Hindus from society and social dynamics, as I have discussed in detail elsewhere (N. Gupta 2013). Ethnic and linguistic minorities in contemporary Indian society are thought to occupy traditional Hindu territories such that all a scholar needs to know is the stratigraphic relationship between Hindu material culture and that of Other historical groups. These views predate the demolition of the Babri Masjid (N. Gupta 2012).

In the aftermath of seemingly state-sponsored violence in Ayodhya (Ratnager 2004: 241), how do we pull focus from a state-oriented view of Indian archaeology and broaden our perspective on the interests of local communities in archaeology? How do we deepen our understanding of how local conditions influence knowledge-making in post-colonial India? Geographic visualization methods, as I will demonstrate below, offer exciting possibilities to expand our view and shed light on the influence of beliefs and values on archaeological practices.

3. GIS and geographic visualization for the history of archaeology

Visual representations have epistemic value in the communication of knowledge claims. Geovisual, short for geographic visualization, the examination of unseen geographic and spatial patterns and relationships in complex data (MacEachren & Kraak 2001; Huisman *et al*. 2009), is the interaction with,

and creation of visual media and technologies to enrich the scientific process and promote unexpected insights on time-dependent spatial phenomena (Kwan 2000). Specifically, geovisual methods in social and historical studies of archaeology enhance, and draw out the influence of geography or physical and social space on ways of knowing—as the geographer David Livingstone (2003: 11) puts it, "knowledge, space and power are tightly interwoven" at all scales of scientific inquiry, whether as an individual, social groups, states or regions. Visualizing specific places where archaeologists carried out fieldwork at particular moments, offers an innovative method of historical inquiry to examine *how* knowledge is woven with power and space, a critical factor in understanding change and continuity in archaeological practices. Geovisualization is especially valuable when working with large, complex data (MacEachren & Kraak 1997) such as archaeological collections.

Material remains such as stone and metal tools, bones, pottery, seeds, pollen, coins and inscriptions are part of the archaeological data collected in the field. Along with the artifacts themselves, survey and excavation reports, maps and photographs also play a crucial role in the interpretation of archaeological data (Daniel 1981: 11-12).

Survey and excavation are highly effective field methods to collect information on the location, distribution and organization of past societies. The locations of field investigations are also sensitive indicators of places which archaeologists have access to at particular times. Archaeological fieldwork itself forms a unique class of historical data, which sheds light on the aims of research and the worldview of the researchers. These records document the location, timing, duration and sequence of investigation.

Conventional visualizations such as graphs offer effective displays for sequence and duration (figure 1); however, these techniques do not allow a reader to see the geographic dimension of archaeological data. This loss of information is problematic. GIS-based visualization offers possibilities to display time-dependent spatial data such as archaeological fieldwork. By re-engaging the geographical dimension, the reader gains insight on unknown geographic and spatial patterns and relationships in complex data within a contextual setting (Tomaszewski 2008).

A geographic information system (GIS) is a spatially explicit database and because its records are best represented as maps, geographic visualization is a key strength of this method. Some archaeologists compile attributes of archaeological sites in GIS databases (Jones 2010). A key issue here for historical studies is the identification of places with unknown geographic locations and their representation as geographic features within a GIS. Some historical sources do not document geographic coordinates or other descriptors such as streets and administrative units. Where names of places are the only available data, their ambiguity poses challenges for spatially explicit databases. Indeed, as Elliott & Gillies (2011) suggest, a GIS might not be the most effective tool for certain research questions.

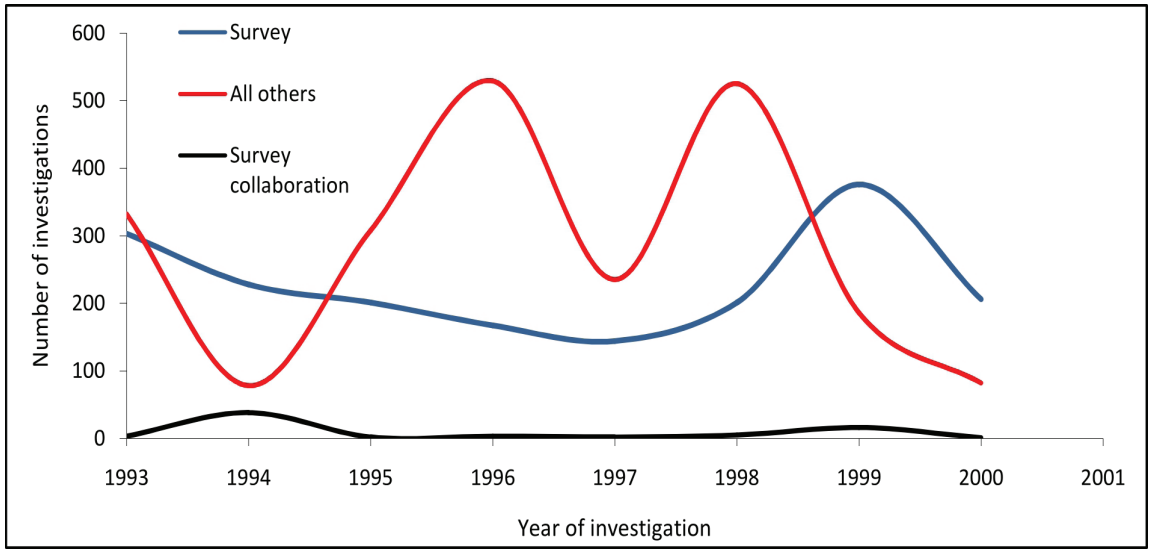

Figure 1. Graph illustrating field investigations (survey and excavation) from 1993 to 2000 conducted by the Survey (blue), all others, including university and state departments (red), and the Survey's collaborations (black).

Moreover, even though archaeologists share field and laboratory methods, their records are the source of great variability. For example, when faced with different recording methods for locations of archaeological investigations, do we fill the gap with geographic coordinates of present-day sites or do we accept variability in the field records? If the latter, how do we analyze the data in a GIS? This concerns one aspect of data quality and impacts how we communicate limitations of data to non-specialists (Devillers *et al*. 2010). Careful examination of fieldwork and published reports creates opportunities to understand the archaeologist's research aims and to assess the kinds of evidence that practitioners deem acceptable at particular times.

4. Geovisualizing archaeological fieldwork

In their assessment of Indian archaeology, Chattopadhyaya *et al*. (2002: Appendix) remark that the Survey is the "primary" institution that organizes "methodical explorations and excavations regularly". Figure 2, however, suggests that overall universities and state departments of archaeology have carried out a greater amount of fieldwork than the Survey. Furthermore, the evidence suggests collaborative work between knowledge producers, and on occasion with the Survey. In many places, particularly in northern India, university and state departments carry out a greater proportion of field investigations than the Survey. The collection of archaeological data in India often takes place amid large construction projects that are financed by the central government, as will be discussed more fully below.

The map above shows that Indian archaeology is neither evenly distributed nor uniformly practiced over time. Between 1993 and 2000 the proportion of archaeological investigations in territories north of the Narmada River was greater than those carried out south of the river. The greatest concentration is along the upper Ganges River and at its confluence with the Yamuna River. In these territories, multiple knowledge producers carry out field studies. Investigations led by universities

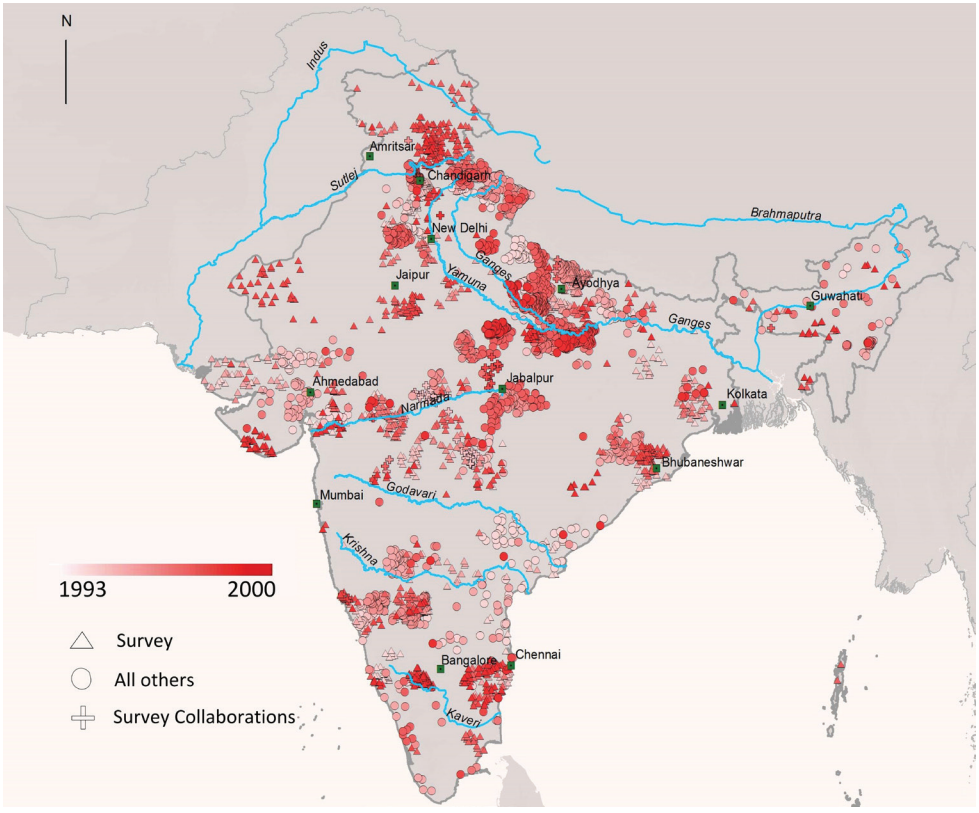

Figure 2. Map illustrating field investigations by the Survey (triangles), university and state departments (circles) and the Survey's collaborations (crosses). The color of each symbol represents the year of investigation from light to dark on red scale - 1993 in light red to 2000 in dark red. Rivers are represented in blue.

and by state departments are in greater proportion than those led by the Survey. Moreover, we see very few (and if so, sporadic) investigations along the lower Ganges River and in India's easternmost territories along the Brahmaputra River.

Only the Survey carries out field studies along India's northern and western frontline with Pakistan. This is especially the case in territories north of the Sutlej River, where Indian troops have engaged in armed conflict with their Pakistani counterparts on multiple occasions since 1947. Interestingly, universities and a state department (separately) carried out archaeological investigations in the sensitive northern territories along the India-China border. The Survey is active in territories south of the Narmada River, as is evident in southern territories between the Kaveri and Krishna Rivers. While the Survey often carries out investigations on its own along the Indian coastline, it often collaborates with other teams on archaeological investigations in India's interior territories.

Moreover, the proportion and concentrated nature of archaeological investigations carried out by universities and state departments in parts of India suggests that they too, like the Survey, organize methodical field studies. This is true for knowledge producers in both northern and southern India. Figure 3 illustrates marked similarities and differences in university and state department-led investigations. Overall, departments in northern India appear to have been more active than their southern counterparts, especially after 1997.

Interestingly, state departments in southern and eastern India seem to carry out dispersed investigations. State departments infrequently investigate along India's southeastern coastline. This is in contrast to the pattern of investigations on the Krishna, which is clustered, recent and almost exclusively university-led. The clustered pattern is seen in several places throughout India and it is very clear along the Ganges. Investigations by state departments in northern India seem clustered, unlike those of their counterparts in southern India. This fieldwork must be understood in context of its social, political and historical circumstances, as well as in relation to prior archaeological re-

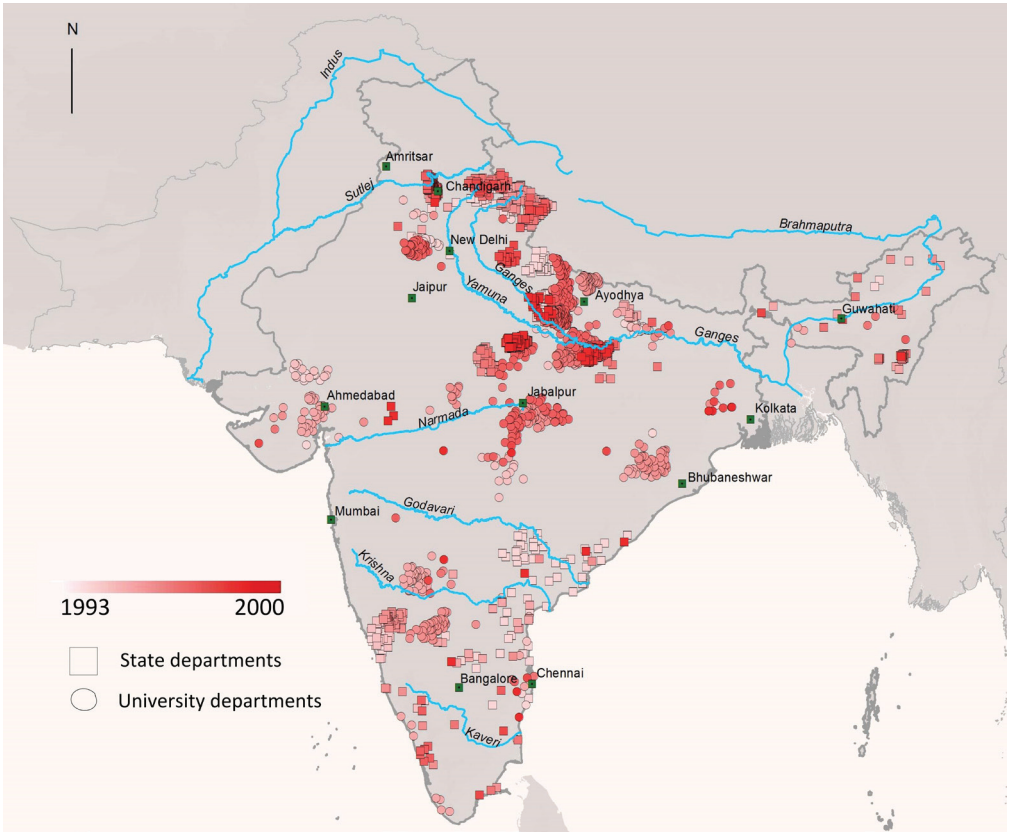

Figure 3. Map illustrating field investigations by university (circles) and state (squares) departments of archaeology from 1993 to 2000.

search in those territories (as will be discussed in the next section).

We can also see a striking absence of university- and state-led investigations in the northernmost territories and relatively little fieldwork by them along the Narmada River. It is possible that because the waterway is the scene to large construction projects and that because these projects are of great interest to the central government, the Survey has preferential access to field projects there.

A geovisual perspective of archaeological fieldwork then offers a contrasting view to the homogenous and monolithic practice of Indian archaeology in which the Survey is the only investigator. Moreover, visualizing the place where archaeologists worked draws out previously unseen and unexpected spatial patterns. For example, the cluster of investigations along the upper Ganges, an unknown pattern, opens a conceptual space where we can ask why archaeologists carry out intense fieldwork here (compared with other places), how archaeologists interpret the data they collected there, and how this work influences our understanding of the Indian past.

5. Insights on Indian archaeology

In 2010, a few weeks prior to the start of the XIXth Commonwealth Games in New Delhi, the Allahabad High Court released its decision on the ownership of the grounds where Babri Masjid once stood. The ruling also addressed legal suits filed several years prior to the demolition of the mosque. During deliberations, the Court evaluated as evidence written history, oral history and archaeological data collected during field excavations in 2003 (for more see Varma & Menon 2010). The Court's verdict called for the division of the grounds between three contesting claimants, namely, the Nirmohi Akhara, the Sunni Central Board of Waqfs and Ram Lalla (in counsel with a member of the *Hindutva*-influenced Bharatiya Janata Party) and each immediately appealed to the Supreme Court of India to overturn the decision. Following these appeals, the Supreme Court stayed the order of the High Court, and ownership of the grounds remains contested.

Public interest in India's past is manifest in financial support to understand who Indians are and where they come from. The Survey, funded by the central government, aims to be the custodian of Indian heritage, yet universities and departments in state governments are actively engaged in archaeological work as well (as the data shows, even more so). Archaeology receives modest funding from the Indian national government. In the 1992 fiscal year, the central government committed a total amount of 440.9 million Rupees for 1993 (roughly 15.4 million US dollars). In 2009 the budget called for 4.2 billion Rupees, equivalent to 89.2 million US dollars (Ministry of Culture 2010), which, for comparative purposes, is a fraction of the funds that Japan spent (773 million US dollars) in 2007 for "administrative operations" in archaeology (Ikawa-Smith 2011: 690) .

There are competing interpretations on funding for archaeologists. While Chakrabarti (2010: 76) remarks that there is "no dearth of money" for archaeological research, the archaeologist V. Selvakumar points out that funding for arts and culture accounted for only 0.1% of India's annual budget in 2007 (2010: 470) and argues instead that employment opportunities for students of archaeology and history are on the decline. Moreover, Selvakumar suggests that the Survey receives up to half of the budgeted federal funding for arts and cultural activities, whereas Chadha (2010: 228) cites a lower figure of 30% for the arts budget in 2005. Yet this does not clarify how the Survey spends its funds, nor does it shed light on the Survey's relationship with other archaeology departments. A better understanding of these issues can be gained through social and historical studies of archaeological projects, for example, in which the Survey collaborated with other knowledge producers.

The view of Indian archaeology as a homogenous and monolithic practice is misleading. It is clear from a spatial view of archaeology that the scenario is more complex than scholars suggest. At its extreme, Indian archaeology is thought synonymous with the Survey, which is credited with the "dismal" state of the discipline (Ray 2008: 246-247). Yet this does not explain how and why knowledge producers other than the Survey collect archaeological data and continue to do so.

For example, some state departments are very active in archaeological research. The Directorate of Archaeology in the northern state of Uttar Pradesh, led by Rakesh Tewari, organizes archaeological fieldwork in that state. In 2006 the Directorate hosted an international conference, 'First Farmers in a Global Perspective', which attracted specialists from leading teaching and research institutions within India and from abroad (Tewari *et al*. 2008a). The Directorate published the conference proceedings in a special issue of *Pragdhara*, its in-house, bilingual (Hindi and English) journal.

The proceedings highlight the research interests and views of Indian archaeologists when it comes to their place in the major research tradition. For over a century, the identity of Indo-Europeans has been a focus for prehistoric research in Europe and

Asia. Influential scholars believe that the linguistic signal corresponds with an archaeological and genetic one (Ammerman & Cavalli-Sforza 1984; Bellwood 2008: 332-333). In the Indian context, archaeologists such as Pant (2008) believe that social and political complexity began with the practice of large-scale agriculture and these scholars often consider prehistory, the time before the *Rg Veda*, as simple, idyllic and monolithic.

Indian archaeology holds caste as an organizing principle (Misra 2001). Caste is defined as endogamous, hereditary and hierarchically organized (Majumdar 1998). Traditional Indian scholars believe that caste is synonymous with Hindu and this ideology, more than others, is thought to characterize Indian society (and thus the Indian past and present). It is for this reason that the examination of cultural contact between aboriginal peoples and caste society is of great interest for scholars who study the origins of the Indian population (e.g. Walimbe 2007).

Furthermore, most Indian scholars reject the external origins of agriculture and its spread from a single source in West Asia. They argue instead that food production originated in multiple locations, often citing recent investigations in East Asia that establish the antiquity of rice cultivation there (Agrawal 2001: 19). It is in this framework that Indian archaeologists argue for the independent origins of agriculture within India, specifically in the Ganges Valley (Tewari *et al*. 2008b).

This view encourages archaeologists to reject explanations that see innovations developed elsewhere being brought into India by dynamic and creative groups. Yet many Indian archaeologists do not reject migration as an explanation for change nor the premise of the migratory framework. For example, when archaeological data points to development over time and to a more complex prehistoric past, some archaeologists attribute material culture to (Indian) creative and dynamic groups (Jayaswal 2008).

In her examination of prehistory in the Ganges Valley, Jayaswal argues that there existed two branches of the Mesolithic population. She explains that one branch "evolved" new technologies and agricultural practices, whereas the other "resisted change" (2008: 325). The group that did not develop technologies, she argues, "preferred to survive in isolation" and continued to hunt and gather (Jayaswal 2008: 325). The two cultures "drifted" from each other sometime in the past. This implies that group identity was clearly defined, exclusionary and essentialist. So how do we identify the group that resisted change?

Jayaswal proposes that because of their "cultural conservatism", the resisters are often found in "geographically isolated areas" where they hunt and practice animal husbandry (2008: 325-326). Surprisingly, Jayaswal does not shed light on dwellings, seasonal or otherwise, for culture. However, the progressive group –to whom the material record for successive archaeological periods is attributed– is easily identified by archaeologists because of its "village like settlement" (Jayaswal 2008: 325-326). This view of prehistory emphasizes cultural continuity between contemporary and prehistoric societies.

Although Jayaswal does not say so, the Indian study of prehistory often includes studies of aboriginal peoples and their interaction with 'Hindu society'. This is of particular interest where the government has vested interests in natural resource extraction and large-scale construction. Some Indian archaeologists think in terms of recovering cultural achievements of their ancestors. They hold the Hindu culture constant so as to delineate traditions of the Others. They consider aboriginal peoples to be 'fossil cultures' that give us insight into remote human history. These ethnocentric views celebrate the progress of Hindus while emphasizing the lack of creativity amongst aboriginal peoples (Pant 2008).

In his opening address to the First Farmers conference, P. C. Pant remarks that in Paisra, a village in Bihar, the Indian government gave the Kodas opportunities to "improve their lot" (2008: 7). He notes that following independence in 1947, the government gave the hunter-gatherers "land, equipments, and other facilities for agriculture" (Pant 2008: 7). Pant observes that, despite this investment, the Kodas continued to harvest forest resources and he suggests that their mixed economy does not "qualify" them as farmers. Pant likens this situation to prehistoric cultures in the Ganges Valley, which prior to a cultivation-based economy "remained almost static without showing any observable signs of development for about four thousand years or so" (Pant 2008: 7). These methods serve social and political aims.

It is unlikely a coincidence that these views are promoted at a time when ethnic and linguistic minorities in India are increasingly demanding their social and political rights. The study of archaeological material is often cast into an historical framework in which traditional relations between aboriginal peoples and caste society take precedence over the concerns of ethnic and linguistic minorities.

6. Conclusion

The demolition of the Babri Masjid at the hands of *kar sevaks*, and the loss of human life in its wake, provides an opportunity to examine the relationship between archaeology and Indian society. I used a GIS methodology to examine the established state-

oriented framework and to shed light on how perceptions of this homogeneity influence our understanding of Indian archaeology. By re-conceptualizing the relationship between local communities and state-oriented archaeological projects, I have shown how ideas about cultural continuity have influenced the practice of Indian archaeology. These views often emphasize the cultural achievements of Hindus while they obscure and minimize all other social groups. India's ethnic and linguistic minorities are increasingly demanding their social and political rights. Through geovisual methods, we can demonstrate *how* knowledge is interwoven with power and space, and, thus reorient our view of the practice of Indian archaeology, which can help us reach more amicable resolutions where tensions exist.

The nationally oriented framework takes a caste-based view of prehistory. In this historical framework, Indian archaeology assumes cultural continuity between contemporary and prehistoric societies. Archaeologists think in terms of a simple and idyllic prehistoric past, such that territoriality and political activities emerged with large-scale agriculture. They attribute material culture to specific ethnic and linguistic groups. In this hierarchical scheme, internal dynamics are overlooked as explanations for change. Prehistory is made to conform to Indian history.

These methods serve social and political aims. In assuming a static and unchanging prehistoric past, scholars and policy makers justify the social, economic, political and cultural marginalization of aboriginal peoples. At the same time that these views are promoted, the government has invested in large construction projects and these projects often entail the displacement of local communities. This is a great source of tension between local communities and national governments. In obscuring local interest in archaeology and heritage management, a state-oriented Indian archaeology promotes a homogenous view of the Indian past. Yet by re-conceptualizing local interests in archaeology, we not only gain a more nuanced understanding of social issues such as Babri Masjid, but we can also create opportunities to relieve tensions, and perhaps, prevent conflict over ownership of the past.

Notes

1. Scholars use the term *kar sevak* (an individual) in different ways. *Kar seva* (an action) can be translated as 'lending a hand' to any cause, and this does not necessarily denote a particular organization. In this instance, I use *kar sevaks* to refer to individuals committed to (re-) building a temple on the grounds of the Babri Masjid, and who believed that tearing down the mosque was necessary to achieve their goals.

2. Historians and historians of science vigorously debate this issue. On this, Pyenson (1993), and Palladino and Worboys (1993) offer insight on imperialism and science before the Second World War. Kapil Raj (2013: 337) discusses tensions in the "circulatory property of knowledge" and the importance of 'where' science is made. David Livingstone (2003:11) examines the 'geography of science' or the ways in which knowledge is made and circulated; Nielsen et al (2012) discuss fieldwork in the context of drawing disciplinary boundaries.

3. Indian scholars consider the *Mahabharata* and *Ramayana* to be epics. Both narratives are popular, especially so in northern India. Scholars who study the texts generally agree that they do not contain sufficient details on the social, political and historical context of their creation. Scholars do not have secure dates for the texts. Researchers such as Nicholson (2010) study the internal coherence of these philosophies and suggest that the texts had multiple authors. They also generally accept that the texts are recent relative to the earliest Vedic text, the *Rg Veda*.

4. In 1975 the Janata Party, organized in dissent and in rejection of Indira Gandhi's declaration of emergency rule, formed the national government. The political organization dissolved in the early 1980s. Several national political organizations, including the *Hindutva*-influenced Bharatiya Janata Party trace their roots to members of the Janata Party and to this politically-turbulent moment in Indian history.

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