THE ROOTS OF HINDUISM

The Early Aryans and the Indus Civilization

ASKO PARPOLA

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Preface

India's earliest urban culture, which existed from 2600 until 1900 BCE, was discovered in the valley of the Indus River in the early 1920s. The Indus civilization had a population estimated at one million people, who lived in more than 1000 settlements, several of them cities of some 50,000 inhabitants, most notably Harappa and Mohenjo-daro, which display extraordinary town planning and water engineering, but not such splendid palaces and temples as ancient Egypt or Mesopotamia. With an area of nearly a million square kilometers, approximately a quarter the size of Europe, the Indus civilization was more extensive than the other key urban cultures of the time, in Mesopotamia and Egypt; it stretched eastwards from the Indus Valley as far as about Delhi and southwards almost as far as Mumbai (Fig. 4.2). It had long-distance contacts with West Asia, as proved by Indus objects and cuneiform records found in Mesopotamia. It also largely established a way of life that has continued in the villages of the subcontinent until the present day.

Yet, after almost a century of excavation and research, the Indus civilization remains comparatively little understood, especially in regard to its thought. What language did the Indus people speak? Is it related to the Sanskrit language of north India, to the Dravidian languages of south India, or to another surviving Indian language family? How might we decipher the exquisitely carved Indus inscriptions? What deities did the Indus civilization worship? Did these deities survive to become part of the religion described in the earliest surviving Indian literature, the Vedas, composed in Sanskrit, which are generally attributed to the centuries after 1500 BCE? Did the Aryan composers of the Vedas migrate to South Asia from outside the subcontinent? If so, where did they come from, and during what period did they migrate? Indeed, are the roots of contemporary Hinduism to be found in the religion of the Indus civilization as well as in the Vedic religion?

This book proposes answers to these fundamental questions about the beginning of Indian civilization. Some of the answers occurred to me soon after the start of my career in the study of Vedic literature and religion half a century ago, while others have struck me only in the last few years, following decades of research, both in Europe and in Asia. I have

published most of them in the scholarly literature (where the interested reader will find more detail and full documentation). However, this literature is not well known outside a relatively small circle of experts. The time is ripe to introduce what I think are the most solid of my conclusions to a wider readership. My hope is that this book will stimulate further research and thus contribute to a solution that will be acceptable to many scholars.

Unfortunately, as I shall outline in the Introduction, at present there is little agreement on many of the issues I discuss. Since the 1980s, the above questions, especially the "Aryan problem," have been debated with increasing animosity, colored by the history of modern colonialism in India, and often by people without pertinent qualifications. Hence, it is vital to sort out the origins of the Vedic Aryans if we are to establish the true linguistic identity and religious affinity of the Indus civilization. Fortunately, the prospect for settling this vexed question has recently improved with the advance of archaeological excavations in Central Asia—where a major new Bronze Age civilization (Bactria and Margiana Archaeological Complex, BMAC, or the Oxus civilization), was discovered in the 1970s—and in Eurasia, including Russia.

Archaeological cultures have long been correlated with linguistic and ethnic groups. To take one relevant example, the proposal that people of the Andronovo cultures of Kazakhstan spoke an Indo-Iranian language was put forward by A. M. Tallgren in 1928. Various later scholars have had the same opinion, but while some speak of Proto-Aryan, others speak of Proto-Indo-Aryan, others of Proto-Iranian; others (e.g., Lamberg-Karlovsky 2002) deny the very possibility of such a correlation. I shall not discuss the methodology of archaeo-linguistic correlation here, but restrict myself only to some fundamental conclusions. Readers interested in the methodology should consult the publications of J. P. Mallory (1989 and later), who has developed this methodology remarkably.

The relatively uniform material "cultures" studied by archaeology reflect human communities, whose members must have communicated with each other by means of a language (in some cases more than one language). Shared material culture and shared language are both among the strongest sources of ethnic identity. They may change very little if people stay in the same place and receive no visitors from beyond their habitat, as has happened in Iceland since the early Viking Age. Contact with other communities has normally led to changes, the extent of which depends on the intensity of contact. Trade may introduce new artifacts and ideas, and loanwords denoting these artifacts and ideas. Conquest and immigration may lead to a community's abandoning its earlier culture and language in favor of a new culture and language. Language shifts involve a period of bilingualism, when part of the community speaks two (or more) languages.

Such continuities and change can be analyzed using a comparative method. Both archaeology and linguistics have developed techniques to do this. In principle, when correlating languages with archaeology, it is better not to assume long-distance migrations, except under exceptional circumstances, such as the combination of open steppe with wheeled vehicles or horses (cf. Nichols 1997:369). There must always be tangible archaeological evidence for assuming the existence of such movements.

The most important methodological principle is that isolated correlations are invalid, only a web of correlations similar to that of an entire language family can be convincing.

Every piece of evidence available from archaeology and linguistics should be used and should fit together. With this methodology in mind, I have been searching, since 1973, for an optimal solution to this puzzle: How can the Eurasian archaeological finds be correlated with the discoveries of Indo-European historical linguistics and the route of the Aryan migrations to India be established?

* * *

Given the above extremely contentious background, it is perhaps more than usually necessary for an author to present his credentials—linguistic, anthropological, archaeological, and otherwise—for writing on this subject in its many and varied aspects. I would therefore like to relate, fairly briefly, how and why I undertook the relevant research.

After seven years of Latin at school, I went to the University of Helsinki in 1959 to study classics, especially ancient Greek language and literature, but quickly switched to Sanskrit and comparative Indo-European linguistics. Unlike the study of Homer and Herodotus, which I loved, this major seemed to offer vast amounts of material virtually untouched by western scholarship. For my PhD dissertation my teacher, Pentti Aalto, suggested tackling the Drāhyāyaṇa-Śrautasūtra (DŚS), which had not been translated into any language. A critical edition of this text with the medieval commentary of Dhanvin had been started by a Finnish Sanskritist, J. N. Reuter, but only one-fifth had been published, back in 1904; the rest, in Reuter's unfinished manuscript, was kept in the university library.

The DŚS deals with the duties of the chanter priests in Vedic sacrificial rituals. I contacted Jan Gonda, a distinguished Dutch master of Vedic studies, who kindly got me started. Under his guidance I prepared an annotated English translation of the published portion of the DŚS and its commentary (1969), and for my dissertation I studied the relationship of this text to the closely parallel Lāṭyāyana-Śrautasūtra and other literature of the Sāmaveda (1968). This was interesting and exciting work, during which I chanced to discover a unique manuscript containing completely unknown portions of a second parallel text, the Jaiminīya-Śrautasūtra, at the library of the former maharaja of Tanjore (Thanjavur) in the south Indian state of Tamil Nadu (1967 [1968]; 2011d; 2012c; in press f). On my first visit to India in 1971, I photographed this manuscript, and started a search for all existing manuscripts of works belonging to the less-known Jaiminīya branch of the Sāmaveda (1973). Since then I have visited Kerala, Tamil Nadu, and Karnataka some twenty-five times, mainly pursuing and photographing Jaiminīya manuscripts. Ever since 1985, I have collaborated in this work and in the publication of the Jaiminīya texts with Masato Fujii, my former student (Fujii 2012). I am grateful to Fujii-san—and to Toshiki Osada—for making it possible for me to do research in Japan, as well as in India.

Vedic rituals and recitation by Brahmins have survived for some three millennia better in south India than in the north, which was long dominated by Muslim rulers. Frits Staal had documented them in Kerala in his book *Nambudiri Veda recitation* (1961), from which I learned that these particular Brahmins belong to the Jaiminīya school. Staal wanted to record this living oral tradition and invited me to join his project, which he inaugurated by tape-recording the songs of my future guru in studying the Sāmaveda, Śrī Iṭṭi Ravi Nambūdiri. In 1975, I had the opportunity to witness the entire performance of a Vedic *soma* sacrifice

by sixteen officiating priests, who built the sacred enclosure with its huts and a fire altar of 1000 bricks. The resulting two-volume book edited by Staal, *Agni: The Vedic ritual of the Fire Altar* (1983), is a monumental study of Vedic religion. My three contributions include an attempt to penetrate the pre-Vedic Indian background of Vedic rituals. In 1983–1985, accompanied by my wife, Marjatta (who eventually wrote a book, *Kerala Brahmins in transition* [2000]) and two postgraduate students (Klaus Karttunen and Masato Fujii), I documented domestic rituals of Jaiminīya Sāmavedins by taking photographs and videos of actual and simulated performances, and reading with my guru unpublished manuals written in Malayalam, the Dravidian language of Kerala (2011e). Besides the Vedic heritage of the Brahmins, I also studied some other exciting Hindu traditions, such as the cult of Kuṭṭiccāttan, a little-known god of sorcery in Kerala (1999c).

My wish to understand better the formation of Hinduism was what encouraged my initial interest in the Indus civilization. But the impetus to study the Indus script came from Seppo Koskenniemi, a childhood friend who was a scientific advisor to IBM in Finland in the mid-1960s. He asked me, when I had just started working on my PhD, if I would like to use a computer—quite a new technique in those days!—for any research problem in my field. We could use IBM's facilities; Seppo would take care of programming.

Having recently read the Cambridge University classicist John Chadwick's fascinating book *The decipherment of Linear B* (1958), I suggested that we take up the decipherment of the Indus script as a hobby. Chadwick had explained in some detail the methods applied in this detective work by Michael Ventris and himself. Compilation of statistics and indexes to Linear B sign sequences played an important role. I thought a computer could ease this kind of analysis. My younger brother, Simo, who was studying Assyriology, joined our team and provided crucial expertise. In our spare time we collected the Indus texts from archaeological reports, drew up a provisional list of the different Indus signs, allotted a number to each sign, and punched the texts in numerical form onto cards. After the computer had processed all this information into lists, we transcribed the numbers back into pictograms, searched the lists for meaningful patterns, and tested automated methods of decipherment (Parpola, Parpola, & Koskenniemi 1966; Koskenniemi, Parpola, & Parpola 1970). Later the computer was programmed to draw in Indus signs the first concordance to all sign combinations, which was published in 1973. A three-volume revised version was produced in collaboration with Seppo's younger brother Kimmo Koskenniemi, a computer linguist, in 1979–1981 (see Fig. 5.1). Kimmo Koskenniemi (1981) developed automated syntactic methods for the study of the Indus script; these were implemented and tested in her M.Sc. thesis by my daughter Päivikki Parpola (1987; 1988).

Pentti Aalto, my Sanskrit teacher, was a code-breaker for military intelligence during the Second World War. He urged me to test whether some Indus signs could be read on the basis of our assumption that the underlying language was Dravidian (rather than Sanskrit). Since our trial substitutions seemed to yield sense, I quickly drafted a booklet, published in 1969, soon followed by two progress reports (Parpola et al. 1969a,b; 1970). These appeared under the joint names of our team, even though I could not easily consult my team-mates in Finland, because I was by now working in Copenhagen. My hurry was partly due to a rumor that a team of Soviet scholars was trying to decipher the Indus script. I made the mistake

of including unripe ideas and presenting them with overconfidence and without proper checking. I was also quite unfamiliar with Dravidian languages in the 1960s, which led to some blunders. Understandably, these "first announcements" were received with severe and quite deserved criticism. The reviews, though painful reading, were a very useful and sobering lesson. But they did not shake my belief that our method and some of its fundamental hypotheses were correct. The decipherment work had to be continued.

Encouragement came from Gerard Clauson and John Chadwick (1969). Pentti Aalto and I were invited to give lectures in England in 1969, and in 1973 I was one of the speakers at the Royal Asiatic Society's sesquicentenary symposium on undeciphered scripts (1975a). Chadwick, whom I met several times in Cambridge, eventually recommended my book, *Deciphering the Indus script* (1994), for publication by Cambridge University Press. There I developed my early ideas, by proposing specific, carefully checked and tested, Proto-Dravidian readings for two dozen Indus signs.

Some critics continue to label this whole attempt at a partial decipherment abortive, because it allegedly has not made any progress. As if nothing has happened since the late 1960s, they still criticize the approach for those first announcements and for hypotheses abandoned long ago. Yet, a lot of advance was made between 1969 and 1994, and further steps forward have occurred since then.

To improve my grasp of Dravidian languages, in 1969 I started to learn Tamil in earnest with two Tamil scholars, R. Panneerselvam and P. R. Subramanian, who were attached for two years to the Scandinavian Institute of Asian Studies, my institute. They, together with my late friend Eric Grinstead, a specialist in East Asia, compiled for my personal use a reverse index to the seven-volume *Tamil lexicon*—a tool that turned out to be immensely useful in my study of the Indus script. Later, as Professor of Indology at the University of Helsinki, I arranged for Tamil and Malayalam to be taught there by native speakers on a regular basis.

During my first trip to South Asia in 1971, I was able to check the original inscriptions kept in various museums. I discovered hundreds of unpublished inscriptions in South Asian museums and initiated a major project to publish a comprehensive *Corpus of Indus Seals and Inscriptions* (CISI) as an international collaboration under the auspices of UNESCO. After many bureaucratic difficulties, three of the projected four volumes have appeared (1987, 1991, and 2010). This fundamental research tool is approaching completion.

Apart from Chadwick, my mentors in Cambridge included Bridget and Raymond Allchin, who specialized in South Asian archaeology. They published a fundamental survey of research, *The birth of Indian civilization: India and Pakistan before 500 B.C.* (1968), with later updated versions. This book, which I studied very closely, gave me basic knowledge of the current archaeological situation. In 1970, the Allchins established what is nowadays called the European Association of South Asian Archaeology and Art History, inviting me to be one of the founding members; and I had the privilege of serving on the board until 2002. Every second year, the association has arranged an international conference for scholars to present the results of their recent excavations and research. I attended most of these exciting meetings (and organized one of them, in 1993 [Parpola & Koskikallio 1994]), which provided a unique opportunity to follow the development of South Asian archaeology, including, of course, Indus archaeology.

Study of the iconographic motifs of inscriptions and painted pottery from the Indus Valley, as well as small statuettes and terracotta figurines, has suggested parallels in Iran and West Asia that have led to major insights into the history of Indian religions. Archaeological knowledge is required not only for comprehending the Indus civilization but also the evidence for Aryan migrations into India. Since the early 1970s (Parpola 1974), I have tried to gain a better understanding of how the emergence and dispersal of the Indo-European and Uralic (Finno-Ugric) language families are reflected in the archaeological record—for the prehistory of the Indo-Iranian languages involves both of these language families. I have learnt a lot from J. P. Mallory's important book, *In search of the Indo-Europeans* (1989), and from close collaboration with Christian Carpelan, a Finnish archaeologist specializing in northern and eastern Europe (Carpelan & Parpola 2001). I have also had the privilege of visiting some key archaeological sites, such as Gonur in Turkmenistan, the main location of the BMAC or Oxus civilization (two visits at the kind invitation of its excavator, Viktor I. Sarianidi); Botaj in Kazakhstan, important for the history of horse domestication (one visit thanks to David Anthony, a leading researcher; Parpola 1997c); and sites of the Abashevo culture in Russia. For this research I had to acquire a reading knowledge of Russian. My friend Sergej V. Kuz'minykh, an eminent Russian archaeologist, has kept me up-to-date with Russian publications.

In a work like this, one must constantly adjust to the advances made in international research and one's own better grasp of the problems. Just before the book went to press, I attended the twenty-second international conference of the European Association of South Asian Archaeology and Art held in Stockholm in mid-2014. One new piece of information slightly affecting this book may be mentioned. My dates for the Gandhāra Grave culture reported in chapter 8, established in the long-continued excavations of Giorgio Stacul, now require revision. Recent excavations with new radiocarbon dates, communicated by Vidale and colleagues (2014), suggest *c*. 1500–1100 BCE for period IV, *c*. 1200–800 BCE for period V, and *c*. 800–400/300 BCE for period VI.

I am immensely grateful to my friend Andrew Robinson, author of excellent books on the history of writing and decipherment (among many other things), for his willingness to make my text as accessible to the general reader as possible; and to the Building and Use of Linguistic Technology (BAULT) research community at the University of Helsinki and its director Kimmo Koskenniemi for funding Andrew's work and some of the illustrations. Andrew was a hard taskmaster, and without his constant prodding and encouragement I would not have been able to put this book together—or at least not so speedily. The work progressed chapter by chapter, as I sent my first draft to Andrew, who edited it, asking me to clarify everything that he could not follow. He also recommended including a short explanation of Indo-European linguistics and its methods for those readers coming to this subject for the first time (see chapter 3).

My cordial thanks go to Stephanie Jamison and Joel Brereton for generously allowing me to use their new translations of Rigvedic verses referring to the Dāsas and Dasyus in chapter 9. For very useful feedback I am indebted to the anonymous expert readers whom the publisher invited to read the book proposal, and especially the one who read the nearly

final complete manuscript. Harry Falk and Xenia Zeiler also quickly read the text when it went to press and suggested some adjustments.

The illustrations are vital for understanding the ideas in the text. I am much obliged to the all the various copyright holders for granting permission to reproduce them. Many friends and colleagues helped in the task of collecting the permissions: Julian Reade, Dominique Collon, Mark Kenoyer, Ian Hodder, S. V. Kuz'minykh, N. B. Vinogradov, Yuri Rassamakin, Durre Ahmed, Gyula Wojtilla, Andrew Robinson, Dipankar Home, Dipak Bhattacharya, Sayan Bhattacharya, Joyoti Roy, and B. M. Pande. Anna Kurvinen graciously drew two nice maps according to my specifications.

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I dedicate the book to my family: Marjatta, Päivikki and Pekka, and Mette.

Asko Parpola
Helsinki, October 2014

Abbreviations

ASI	Archaeological Survey of India
AV	Arto Vuohelainen
CISI	See CISI in References.
DAMGP	Department of Archaeology and Museums, Government of Pakistan
EL	Erja Lahdenperä
JL	Jyrki Lyytikkä
NMI	National Museum of India

VEDIC TEXTS WITH THEIR ABBREVIATIONS

For editions and translations see Gonda 1975; 1977; Jamison & Witzel 1992.

AĀ	Aitareya-Āraṇyaka
AB	Aitareya-Brāhmaṇa
ĀpŚS	Āpastamba-Śrautasūtra
ĀśvGS	Āśvalāyana-Gṛhyasūtra
AV(Ś)	Atharvaveda(-Saṁhitā) (Śaunaka-śākhā)
AVP	Atharvaveda-Saṁhitā, Paippalāda-śākhā
BĀU	Bṛhad-Āraṇyaka-Upaniṣad (Kāṇva-śākhā)
BŚS	Baudhāyana-Śrautasūtra
BŚu	Baudhāyana-Śulvasūtra
ChU	Chāndogya-Upaniṣad
DŚS	Drāhyāyaṇa-Śrautasūtra
GGS	Gobhila-Gṛhyasūtra
HGS	Hiraṇyakeśi-Gṛhyasūtra
JB	Jaiminīya-Brāhmaṇa
JGS	Jaiminīya-Gṛhyasūtra
JŚS	Jaiminīya-Śrautasūtra

JUB	Jaiminīya-Upaniṣad-Brāhmaṇa
KĀ	Kaṭha-Āraṇyaka
KauśS	Kauśika-Sūtra
KB	Kauṣītaki-Brāhmaṇa
KS	Kaṭha-Saṁhitā / Kāṭhaka-Saṁhitā
KŚS	Kātyāyana-Śrautasūtra
KŚu	Kātyāyana-Śulvasūtra
KU	Kaṭha-Upaniṣad
LŚS	Lāṭyāyana-Śrautasūtra
MS	Maitrāyaṇī Saṃhitā
PB	Pañcaviṁśa-Brāhmaṇa
PGS	Pāraskara-Gṛhyasūtra
RV	Rigveda (-Saṁhitā)
ŚĀ	Śāṅkhāyana-Āraṇyaka
ŚB(M)	Śatapatha-Brāhmaṇa (Mādhyandina-śākhā)
ŚBK	Śatapatha-Brāhmaṇa, Kāṇva-śākhā
ṢB	Ṣaḍviṁśa-Brāhmaṇa
ŚŚS	Śāṅkhāyana-Śrautasūtra
SV	Sāmaveda(-Saṁhitā) (Kauthuma-śākhā)
SVB	Sāmavidhāna-Brāhmaṇa
TĀ	Taittirīya-Āraṇyaka
TB	Taittirīya-Brāhmaṇa
TS	Taittirīya-Saṁhitā
VādhA	Vādhūla-Anvākhyāna
VādhŚS	Vādhūla-Śrautasūtra
VS(M)	Vājasaneyi-Saṁhitā (Mādhyandina-śākhā)

The Roots of Hinduism

Introduction

1

Defining "Hindu" and "Hinduism"

Before investigating the roots of Hinduism we must first define what is meant by the terms Hindu and Hinduism. The etymology of "Hindu" goes back to about 515 BCE, when the Persian king Darius the Great annexed the Indus Valley to his empire. *Sindhu*, the Sanskrit name of the Indus River and its southern province—the area now known as Sindh—became *Hindu* in the Persian language. The Ionian Greeks serving the Great King did not pronounce word-initial aspiration (like French-speakers today) and so in the Greek language Persian *Hindu* became *Indos* (whence, Latin *Indus*) and its surrounding country became *India*. But when the Persian-speaking Mughals conquered northern India in the sixteenth century, they called the country *Hindustan* and its people *Hindu*. During the Mughal empire, in the seventeenth century, the British, too, began to use "Hindu" (or "Hindoo") to describe the people living in the subcontinent. During the British period, in the nineteenth century, the term was adopted by those Indians who opposed colonialism, in order to distinguish themselves from Muslims. In the twentieth century, Hindu became the common label for all Indians who were not Muslims, Buddhists, Christians, Jains, Jews, Parsees, or Sikhs. V. D. Savarkar used the neologism *hindutva* (coined with the Sanskrit abstract noun suffix *-tva*) to mean "the quality of being a Hindu, Hindu identity" in his influential nationalist-political tract *Hindutva: Who is a Hindu?* (1938), first published under a pseudonym in 1923, and still in print.

An East India Company merchant and evangelical Christian, Charles Grant, is known to have used the term "Hindooism" for the earlier "Hindoo religion" or "Hindoo creed" as early as 1787. During the nineteenth century, Hinduism became the general name for the native religion(s) of India, excluding Buddhism, Jainism, and Sikhism (Pennington 2005). Some Indians object to having a foreign term for their religion, preferring the Sanskrit expression *sanātana dharma*, "eternal law or truth," despite the fact that this expression was not applied to any religious system in ancient texts.

Another objection is that "Hinduism" artificially bundles together different religions, such as the Vaiṣṇava, Śaiva, and Śākta traditions of worship, each with its own theology and cult. One may indeed say that:

> Hinduism *in toto*, with various contradicting systems and all the resulting inconsistencies, certainly does not meet the fundamental requirements for a historical religion of being a coherent system; but its distinct entities [the so called "sects"] do. They are indeed religions, while Hinduism is not. What we call "Hinduism" is a geographically defined group of distinct but related religions, that originated in the same region, developed under similar socio-economic and political conditions, incorporated largely the same traditions, influenced each other continuously, and jointly contributed to the Hindu culture. (von Stietencron 1989:20)

The classical Hindu gods Viṣṇu and Śiva go back, at least in part, to the polytheistic pantheon of the older Vedic religion. The Vedas are regarded as the ultimate scriptural authority by most Hindus, especially the "orthodox" Brahmins, but on the whole the Vedic religion plays a small role in classical Hinduism, many aspects of which differ fundamentally from the religion described in the Vedas. The more recent part of the Vedic religion, "Brahmanism," is sometimes counted as an older phase of Hinduism, since much of later Hindu philosophy is based on it. Usually, however, "classical" Hinduism is considered to be of post-Vedic date, beginning around 400–200 BCE, and epitomized in the epics the Mahābhārata and the Rāmāyaṇa, and the Purāṇas. In his masterly sketch, *Religions of ancient India*, the great French Indologist Louis Renou emphasizes the change that occurred between the Vedic religion and later Hinduism:

> The Vedic contribution to Hinduism, especially Hindu cult-practice and speculation, is not a large one; Vedic influence on mythology is rather stronger, though here also there has been a profound regeneration. Religious terminology is almost completely transformed between the Vedas and the Epics or the Purāṇas, a fact which has not been sufficiently emphasized; the old terms have disappeared or have so changed in meaning that they are hardly recognizable; a new terminology comes into being. Even in those cases where continuity has been suggested, as for Rudra-Śiva, the differences are really far more striking than the similarities. (Renou 1953:47–48)

But if this analysis is correct, as I believe it is, it prompts the question: where did the many, indeed dominant, elements of Hinduism that are non-Vedic come from? No doubt many local religious cults were absorbed into and assimilated by Hinduism in the course of its millennial development and expansion and a lot of ideological evolution took place, yet even so the Indus civilization seems a likely original source, in spite of its great antiquity.

Regarding the Aryans, Renou cautiously continues: "It would have been quicker to enumerate those elements [of Hinduism] that are demonstrably Aryan: they would consist of perhaps a few functional gods (as it is the fashion to describe them), the *soma* cult and the rudiments of a social system: little enough, in all conscience" (Renou 1953:47–48).

Regarding the Indus civilization, he suggests: "If the forms of religion revealed in the seals and figurines of the Indus have any remote connection with Indian forms, it is not so much with those of Vedism as with those of Hinduism, a Hinduism which, though known to us only by inference, must have already existed in Vedic times, and probably considerably earlier" (Renou 1953:3).

Part I of this book (The Early Aryans) examines the evidence for the Aryan migrations and the formation of the Vedic religion. Part II (The Indus Civilization) is devoted to the possible legacy of the Indus civilization to the Vedas and to later Hinduism. The treatment is basically in chronological order, but in some places it proved necessary to depart from this.

2

The Early Aryans

Both the Vedic literature and the fundamental texts of classical Hinduism are in Sanskrit, which is termed an Old Indo-Aryan language. The Prakrit languages, classed as Middle Indo-Aryan, were spoken in South Asia between about 300 BCE and 1000 CE. The Prakrits then changed into early forms of the New, or Modern, Indo-Aryan languages, which include Hindi, Punjabi, Bengali, Marathi, and many other South Asian languages spoken today. The name Indo-Aryan was given in order to distinguish all of these languages from the Aryan languages spoken outside South Asia. The latter consist mainly of the Iranian language family (the name Irano-Aryan would have been more logical), which has been spoken in modern times principally in Iran but also in the Caucasus area (the Ossetic language) and in Central Asia, Afghanistan, and Pakistan (the Tajik, Pashto, and other languages). In addition there is a small group of so-called Nuristani languages in northeastern Afghanistan (Nuristan), previously known as Kafiri ("pagan") languages; their speakers were forcibly converted to Islam by the Afghans in 1896. The Nuristani languages have both Iranian and Indo-Aryan features, and their classification is not yet settled.

Old Iranian languages include Old Persian, preserved in the inscriptions of Darius the Great and other kings of the Achaemenid empire (559–330 BCE), and Avestan, which is the language of the Avesta, the sacred literature of the Zoroastrians (who include the Parsees of India). The oldest parts of the Avesta are thought to date from around 1000 BCE, being of nearly the same age as the oldest Vedic text, the Rigveda. The Avesta and the Rigveda share a number of religious terms, for example, the words for "worship, sacrifice" (*yasna* in Avestan, *yajña* in Vedic) and "prayer, spell" (*manthra* in Avestan, *mantra* in Vedic), and the cultic phrase "with hands raised up in homage" (*ustānazastō . . . nəməŋhā* in Avestan, *uttānahasto namasā* in Vedic).

Speakers of Old Indo-Aryan and speakers of Old Iranian called themselves by the same name, that is, *ārya* (Old Indo-Aryan) and *arya* (Old Iranian); the Old Iranian genitive plural *aryānām*, "(country) of the Aryas," in the course of time became shortened to the country name Iran. The meaning of this tribal self-appellation is debated, but many philologists think it originally stood for "hospitable, noble," or for "master of the

household, lord." Together, Indo-Aryan and Iranian form the Aryan group of languages, though this collective is nowadays usually called Indo-Iranian (to avoid the connotation acquired by "Aryan" from its association with the racial prejudices and misconceptions culminating in the horrors of Nazi Germany). Indo-Aryan and Iranian are postulated to descend from a single original language, Proto-Indo-Iranian, with dialects that drifted apart and became separate languages, which in turn divided to give rise to the modern Indo-Iranian languages.

After Vasco da Gama reached India in 1498, he was followed by European missionaries, some of whom acquired remarkable mastery of Indian languages. They included an English Jesuit, Thomas Stephens (Tomáz Estêvão), who retold the story of the New Testament in Konkani under the title *Krista-purāṇa*, covering more than 10,000 verses, and also wrote the first Konkani grammar. Stephens noted the similarity of Sanskrit and European languages as early as 1583; so did the French Jesuit Gaston-Laurent Coeurdoux, author of *Moeurs et coutumes des Indiens* (pirated by Jean Antoine Dubois [{1825} 1906]), in a letter written in 1767 to A. H. Anquetil-Duperron, describing the relation of Sanskrit to Greek and Latin.

The idea that languages change, and that the ancestor of current related languages may have died out, was expressed with reference to Sanskrit and its cognates by Sir William Jones in his speech at the Asiatick Society in Calcutta on February 2, 1786. After studying Sanskrit with the help of a Bengali paṇḍit, Jones announced that:

> The *Sanscrit* language, whatever be its antiquity, is of a wonderful structure; more perfect than the *Greek*, more copious than the *Latin*, and more exquisitely refined than either, yet bearing to both of them a stronger affinity, both in the roots of verbs and in the forms of grammar, than could possibly have been produced by accident; so strong indeed, that no philologer could examine them all three, without believing them to have sprung from some common source, which, perhaps, no longer exists; there is a similar reason, though not quite so forcible, for supposing that both the *Gothick* and the *Celtick*, though blended with a very different idiom, had the same origin with the Sanscrit; and the old *Persian* might be added to the same family. (Jones 1788:422)

When published in the widely read journal *Asiatick Researches*, Jones's suggestion had a revolutionary impact. Some of the Romantics of the early nineteenth century imagined that Sanskrit was the mother tongue of the "Indo-European" language family (a term coined not by Jones but by another polymath, Thomas Young [1813:255]), and that India was the cradle of civilization.

But soon Sanskrit was relegated to the same status as the other Indo-European tongues, along with the area where it was spoken, India. Modern historical linguistics began with Franz Bopp's German publication, "On the conjugational system of the Sanskrit language compared with that of Greek, Latin, Persian and Germanic" (Bopp 1816). The unknown homeland of Proto-Indo-European was now thought to lie in an area of Eurasia yet to be precisely determined. Thus the Indo-Aryans were immigrants in South Asia. But when did they come?

Friedrich Max Müller, who taught Sanskrit, comparative philology, and comparative religion at Oxford University during the latter half of the nineteenth century, edited the earliest of the four principal Vedas, the Rigveda. In 1859, Max Müller estimated that the Rigveda was composed around 1200–1000 BCE. He arrived at this date by assigning the Sūtra texts of the Vedas to 600–200 BCE, then conjecturing that the earlier Brāhmaṇa texts were composed in 800–600 BCE, and the still earlier Mantra texts (the Atharvaveda and the Yajurveda Samhitās) in 1000–800 BCE. Although these estimated dates have been much discussed and criticized, they have turned out to be remarkably sagacious, and today many Vedic scholars (including myself) more or less agree with them. Moreover, philologists have long favored 1500–1200 BCE as the date for the migration of Indo-Aryan speakers into South Asia. One powerful piece of evidence comes from cuneiform documents in Anatolia, West Asia, and Egypt, according to which the rulers of the Mitanni kingdom of Syria in 1500–1300 BCE had Indo-Aryan names, swore oaths by Indo-Aryan gods, and trained chariot horses using Indo-Aryan technical terms (see chapter 8).

All the leading twentieth-century British archaeologists who have studied the Indus civilization—John Marshall (1931), Stuart Piggott (1950), Mortimer Wheeler (1968), and Bridget and Raymond Allchin (1982)—have placed the Aryan migrations in the second millennium BCE. It has proved difficult, however, to pin down specific archaeological evidence that could be connected with this event, for the Aryans were pastoralists and may therefore be assumed to have been mobile, with temporary settlements, at least for some time after their arrival. According to Renou, "In the very primitive architecture which we can infer from descriptions in the Vedic ritual texts there is nothing that can reasonably be compared with the buildings of Mohenjo-daro" (Renou 1953:4). Marshall (1931:I, 111) pointed out another important negative indicator: the horse seems to have been unknown in the Indus civilization, while prominent in the culture described in the Vedas.

The contrary "out of India" view, that the Indo-Aryan speakers originated in India, has recently been much propagated, as mentioned in the Preface. Thomas Trautmann writes in his edited collection *The Aryan debate* (2005):

> In the last several years a number of popular books and websites on the Aryan debate have appeared, many of them—but not all—by authors who are not scholars by their training in the skills of ancient history. Moreover, partisan politics and governments of the day have been making pronouncements about ancient history, and ordering changes in textbooks. The new writings have pressed various versions of the alternative view very strongly, arguing that the Aryans are indigenous to India and were the builders of the Indus civilization. (Trautmann 2005:xvii)

The Aryan debate undoubtedly has multiple causes, including the racial "theories" of the nineteenth and twentieth centuries endorsed by the Nazis. These have been thoroughly researched by Edwin Bryant in *The quest for the origins of Vedic culture: The Indo-Aryan migration debate* (2001). It is worrying, however, that Bryant does not want to take a stand on

the issue after studying the arguments in depth. He concludes: "how the cognate languages got to be where they were in prehistory is as unresolved today, in my mind, as it was two hundred years ago when William Jones announced the Sanskrit language connection to a surprised Europe" (Bryant 2001:12). In my view, it is possible to go quite far toward establishing the truth about the Indo-Aryan migrations.

3

Indo-European Linguistics

Since some of this book requires a basic understanding of the concepts and methods of Indo-European (IE) linguistics, "iron rations" will be provided in this chapter. Those looking for a fuller account are advised to read a good introductory textbook, such as Lyle Campbell's *Historical linguistics* (2004) or, more particularly, Benjamin W. Fortson's *Indo-European language and culture* (2010).

Since languages are complex phenomena, linguistics has developed various subdisciplines, each with its own special terminology and methods. Here are some of the important subdisciplines. Phonetics studies how sounds are produced and classifies their different qualities. Phonology examines sounds as distinctive units (phonemes) and how phonemes combine into a sound system. Phonotactics investigates how phonemes behave when conjoined. Morphology is devoted to the grammatical markers and inflections of words. Lexicography concerns the vocabulary of a language. Syntactics involves the study of how words are combined to form phrases and sentences. Semantics grapples with how words convey meaning. Descriptive linguistics records all aspects of a language as it exists at a given point in its history.

All languages have a history: excepting the dead ones, they change constantly, in all their aspects. Especially important is phonological change, which often involves changes in morphology, too. Historical linguistics (unlike descriptive linguistics) documents how languages change over time, and tries to reconstruct prehistoric changes. It also aims to understand how and why linguistic change occurs, and to define how different languages are related to each other. That is, are the languages part of one family, in other words genetically related—in which case how closely related? If they are not genetically related, have they been in contact with each other at some point in their histories? Or are they totally distinct? The chief method of historical linguistics is therefore comparison of languages. IE linguistics is essentially historical linguistics.

The ancient Indian linguist Pāṇini's Sanskrit grammar (known as *Aṣṭādhyāyī*, "having eight chapters"), composed around 350 BCE, is a marvel of descriptive linguistics, the finest achievement in this field for more than two thousand years (Bloomfield 1933:11; Cardona 1976). Historical linguistics came into being only in the early nineteenth century CE. Before

this, as early as the sixteenth century, the similarity of IE languages had been noted, but it was William Jones's observation (1788:422) of the similarity of Sanskrit, Greek, and Latin, among other European languages, that inaugurated modern historical linguistics (see chapter 2). Jones spelled out his new concept of a genetic relationship by suggesting that these languages had developed from a single original language, which no longer existed—now called Proto-Indo-European (PIE), from Greek *prôtos*, "foremost (in place, time, order), first."

The works of Franz Bopp (1816) and Rasmus Rask (1818) started to establish systematic phonological and grammatical correspondences between vocabulary words of similar meaning, in order to prove a genetic relationship between the IE languages; János (in Latin, Joannes) Sajnovics (1770) had initiated a similar study of the Uralic languages by comparing Hungarian and Saami.

People without linguistic training may draw radically incorrect conclusions from apparent similarities in sound and meaning between languages that in reality are unrelated and often quite distant from each other. For instance, in the Mayan language Kaqchikel, spoken in Central America, the word *mes* denotes "mess, disorder, garbage," which happens to be similar in sound and meaning to the English word *mess*. But there is no regular sound correspondence between words beginning with *m-* in English and their semantic counterparts in Kaqchikel for example, *man: ači, mouse: č'oy, moon: qatiʔt, mother: nan*.

The English–Mayan situation contrasts with the IE languages, where there are regular sound correspondences. For instance, IE words denoting "father" include the following cognates (in the nominative singular):

Late PIE ***p**ətḗr* (< Early PIE ***p**H$_2$tḗr*)
Indo-Iranian: Vedic Sanskrit ***p**itā́*, Old Avestan ***p**tā*, Younger Avestan ***p**ita*, Old Persian ***p**itā*
Greek ***p**atḗr*
Latin ***p**ater*
Celtic: Old Irish *athair/athir*
Germanic: Gothic ***f**adar*, Old Icelandic ***f**aðir/**f**aþer*, Old English ***f**æder*, Anglo-Saxon ***f**ader*
Tocharian A ***p**ācar*, B ***p**ācer*
Armenian ***h**ayr*

In the above cognates, the word-initial PIE **p-* (the asterisk denotes an unattested reconstruction) has been preserved as *p-* in most languages, but in Celtic languages it has been lost, while in Germanic the change **p- > f-* has taken place, and in Armenian so has the change **p- > h-*. (The symbol > means "changes into"; the symbol < means "has developed from.")

The important concept of regularity may be illustrated by taking a different word with a word-initial **p-* in PIE, the verb meaning "to ask" (in the first person present singular active). Here we again find exactly the same sound correspondences at the beginning of the cognates:

PIE ***p**r̥ḱsḱō*
Indo-Iranian: Vedic Sanskrit ***p**r̥cchā́mi*, Old Avestan ***p**ɔrᵊsā*, Old Persian ***p**arsāmiy*
Latin: ***p**orkskō* > ***p**oscō*
Celtic: Old Irish *arco/arcu*

Germanic: Old High German ***f**orscōm*
Baltic: Lithuanian ***p**eršù*
Tocharian A ***p**raksam*, B ***p**reksau*
Armenian ***h**arc'anem*

Jakob Grimm (1822) noted that the change of PIE **p* into Proto-Germanic **f* was not an isolated phenomenon but part of a major change in the entire sound system, involving all labial, dental, and velar stops.

Stops are consonants articulated by first making a complete closure of the vocal tract, stopping the flow of air from the lungs, then abruptly opening the tract with an audible plosion. Stops can be voiced or voiceless, that is, articulated with or without an accompanying vibration of the vocal cords. Labial stops are articulated with the lips, dental stops with the teeth, and velar stops with the soft palate and the back of the tongue; palatals are pronounced with the blade of the tongue touching the hard palate. Aspirated stops are pronounced with an audible and forceful release of breath. Fricatives are continuant consonants produced by partial occlusion of the airstream, causing a friction-like sound.

The PIE voiceless stops changed into corresponding voiceless fricatives in Proto-Germanic: **p* > **f, *t* > **θ, *k* and **ḱ* > χ (written *h*). At the same time PIE voiced stops changed into corresponding voiceless stops in Proto-Germanic: **b* > **p, *d* > **t, *g* and **ǵ* > **k, *g*^{w} > **kw*. And PIE voiced aspirated stops changed into corresponding plain voiced stops in Proto-Germanic: **bh* > **b, *dh* > **d, *gh* and **ǵh* > **g, *g*^{w}*h* > **gw/*w*. Before this, the PIE palatals **ḱ, *ǵ, ǵh* had merged with the PIE velar stops **k, *g, *gh*. PIE **k*^{w}, **g*^{w} and **g*^{w}*h* were labiovelars, that is, velar stops pronounced with a simultaneous rounding of the lips.

Taken together, these Proto-Germanic sound changes are known as the "first Germanic sound shift," or Grimm's law. Such sound laws are expected to apply throughout a language, in all words and grammatical markers, unless the sound law is "conditioned," that is, applicable under restricted conditions. Grimm's law is conditioned, for it applies neither after fricatives (thus PIE **sp* > Proto-Germanic **sp*, not *sf*) nor after stops (thus PIE **kt* > Proto-Germanic **χt*, not χ*θ*). Strict adherence to the rule that sound laws should have no exceptions is an immensely important methodological principle. Emphasized by the so-called neogrammarians during the last quarter of the nineteenth century, it led to great advances in linguistic science.

There are always isolated cases where a sound law does not apply in practice, but even then there is usually a valid explanation. A common reason for such exceptions is analogy. Analogical change is of many different kinds, seeking agreement or similarity with existing patterns or models. For example, the antiquated plural *brethren* may be replaced with *brothers* that is analogous to "normal" plurals. PIE **penk*^{w}*e-* yields English *five* with Proto-Germanic **f* in accordance with Grimm's law, but the preceding numeral PIE **kwetwor-* becomes *four* in English, with a possibly analogical *f* that imitates the beginning of the following numeral *five*, instead of the expected *whour*. Latin *quinque*, "five" seems to involve a similar analogical change (but in the reverse direction), in imitation of *quattuor*, "four."

Besides analogy, there may be other reasons why there may be seeming exceptions to sound laws. One important reason can be that an IE language has not inherited a given IE

word from its own earlier phase(s) of development, but borrowed the word from another IE language which has different sound laws.

Historical linguistics has progressed over the past two centuries, and the mechanics of language change are now fairly well understood, so that the same linguistic methodology can be applied to all languages. Certain sound changes tend to take place in many languages (even genetically unrelated ones). For example, dental, palatal, and velar stops often change into affricates when they are followed by front vowels, that is, vowels articulated in the front part of the mouth, *i* and *e*. Affricates are composite sounds consisting of a stop and a fricative articulated at the same point. Thus Latin *centum*, "hundred" (with *c* pronounced as *k*), has become *cento* in Italian (with *c* pronounced as an affricate, like *ch* in the English word *chess*).

The PIE palatal stops became affricated in early post-PIE times in Proto-Indo-Iranian, Proto-Balto-Slavic, Proto-Armenian and Proto-Albanian—apparently then contiguous languages spoken somewhere north of the Black Sea. These are called "*satem*-languages," as opposed to other IE "*centum*-languages." The word *satem* (a broad transcription for *satəm*) is Avestan for "hundred." The label derives from the fact that *satəm* and *centum* are prominent examples of this particular sound change.

The words for "hundred"—and for "ten," from which "hundred" is derived—have also been important in sorting out the development of PIE "syllabic nasals," *m*- and *n*-sounds that function like vowels when they occur alone between consonants; they have changed in different ways in the different branches of the IE languages. In Proto-Indo-Iranian the syllabic nasals changed into **a*, as in most dialects of Greek, whereas the Arcadian and Lesbian dialects of Greek have *o* instead of *a*. In the late phase of Proto-Indo-Aryan and Proto-Iranian, PIE **e* and **o* changed into **a*, but early Aryan loanwords in Uralic languages show that **e* and **o* were still preserved in their early phases. The two words also exemplify the important role that accent and shift of accent have played in the formation and inflection of IE words: the vowel *e* in the accented first syllable of **dékm̥* is reduced and lost when the accent shifts away from the first syllable to the second syllable in **(d)km̥tóm*.

Here is a selection of words meaning "hundred" and "ten" in various IE languages:

**(d)km̥tóm*, "hundred" (possibly "tenth [ten]")
Old Irish *cét* [i.e., *kēt*]
Italic: Latin *centum*
Greek *hekatón* (*he-* < **sem*, "one")
Germanic: **χunda* > Gothic *hund*, English *hundred*
Indo-Iranian: **ćatám* [i.e., *tśatam*]
> Proto-Indo-Aryan **ćatám/*śatám*
> Old Indo-Aryan *śatám*
> Proto-Iranian **catam* [i.e., *tsatam*]
> Avestan *satəm*
> Old Persian *θata*
Baltic: Lithuanian *šimtas*, Latvian *sìmts*
Old Church Slavonic *sŭto*, Russian *sto*
Tocharian **km̥tóm* > * *käntæ* > A *känt*, B *kante*

PIE **dékm̥(t)*, 'ten'
Old Irish: *deich*
Italic: Latin *decem*
Greek *déka*
Germanic: **teχun* > Gothic *taíhun*, English *ten*
Indo-Iranian: **deća* [i.e., *detśa*]
> (A) Proto-Indo-Aryan **deća/*daśa* > Old Indo-Aryan *daśa*;
(B) Proto-Iranian **deca/*daca* [i.e., *datsa*]
> (a) Proto-Nuristani *daca* [i.e., *datsa*] > Kati *duc*,
(b) Avestan *dasa*
Baltic: Old Prussian *dessempts/dessimpts*, Old Lithuanian *dešimtis*, Lithuanian *dẽšimt*
Old Church Slavonic *desętĭ*, Russian *désyat'*
Albanian *dhjetë*
Armenian *tasn*
Tocharian **tšäkä(n)* > **śäkä(n)* > A *śäk*, B *śak*

The hypothesis that all existing IE languages go back to a single PIE language once spoken in a relatively restricted area is now a generally accepted idea. Helpfully, there is an example in which this assumed process has been documented from the beginning. The Romance languages have developed out of the Vulgar Latin spoken in the Roman empire in the areas where nowadays Italian, French, Spanish, Portuguese, Romanian, and Rheto-Romanian are spoken. We know the Romance protolanguage from copious literary sources: it is Latin, which was originally spoken in a very restricted region of Latium in northern Italy but then spread widely along with the expansion of the Roman empire. Latin was just one member of an "Italic" branch of the IE language family, known from inscriptions since *c.* 600 BCE, which at one time included the dead languages Oscan, Umbrian, and Faliscan (known from scanty sources) but by the beginning of the Christian era consisted of only Latin.

Many other dead languages known from sources inadequate for proper linguistic analysis have been identified as members of the IE language family, more or less securely. Best known are Phrygian (*c.* 800 BCE – 400 CE) from Anatolia, Thracian and Illyrian from the Balkans, and Venetic and Messapic from Italy. If we ignore these additional members, ten main IE branches are generally acknowledged (Fig. 3.1). Listed by date of their first documentation (with the oldest language coming first), they are:

(1) The Anatolian branch in modern Turkey, which became extinct by about 300 BCE. Its principal members are Hittite (*c.* 1600–1200 BCE), Palaic (*c.* 1600–1500 BCE), and Luvian (*c.* 1300–750 BCE), all documented in Mesopotamian cuneiform, while Luvian is also written in its own hieroglyphic script. Luvian was probably the language spoken by the Trojans of Homer's *Iliad*. Lycian and Lydian are important later Anatolian languages, known from alphabetic inscriptions of the fifth and fourth centuries BCE. (For Anatolian, see chapter 6.)

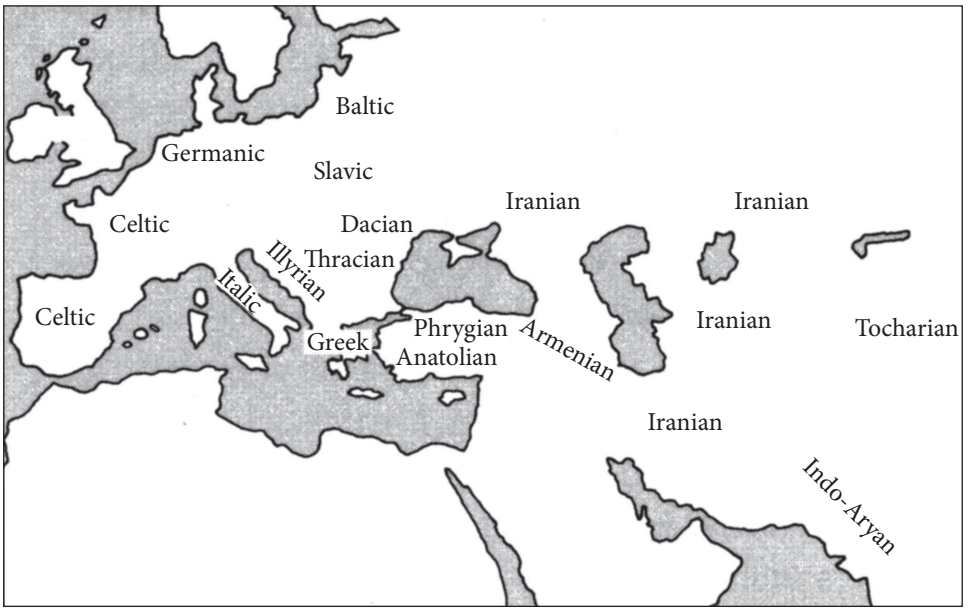

FIGURE 3.1 Generalized distribution of the principal Indo-European languages *c.* 500 BCE (after Mallory and Adams [1997:300]). Courtesy J. P. Mallory.

(2) The Indo-Iranian or Aryan branch, with many languages now spoken in India, Iran, and Central Asia, and in antiquity in the Eurasian steppes. Its scanty oldest testimonia are cuneiform documents from the ancient West Asia related to the Proto-Indo-Aryans of the Mitanni kingdom, dated *c.* 1500–1300 BCE (see chapter 8). The Old Indo-Aryan Rigveda containing 1028 hymns dates from *c.* 1300–1000 BCE, and the most ancient part of the Old Iranian Avesta from *c.* 1000 BCE (see chapter 9). However, loanwords borrowed from Proto-Indo-Aryan and Proto-Iranian into Proto-Uralic and its immediate successors between about 2300 and 1600 BCE represent the oldest known phase of Indo-Iranian (see chapter 7), although they were recorded only in modern times.

(3) The Greek branch with numerous dialects. Its earliest inscriptions in the Mycenaean Linear B script date from the thirteenth century BCE, Homeric literature from *c.* 800 BCE. The ancient Greeks had colonies in Italy, Africa, and Asia, as far as India (see chapter 6).

(4) The Italic branch, discussed above.

(5) The Celtic branch, divided into two groups. Insular Celtic of the British Isles and Brittany, attested in inscriptions since *c.* 400 CE, is the only one to survive today in Irish, Welsh, Cornish, and Breton. Continental Celtic, attested since *c.* 600 BCE, was the most widely spoken language in western and central Europe, ranging from Spain to France all the way east to the Black Sea; the Galatians even reached Anatolia. The spread of the Roman empire and Latin caused Continental Celtic to die out *c.* 300 CE.

(6) The Germanic branch, divided into three groups. North Germanic, currently represented by Icelandic, Norwegian, Danish, and Swedish, is known from runic inscriptions dating from *c.* 150 CE and extensive Old Norse literature from *c.* 900 CE. East Germanic

is synonymous with Gothic spoken in the area north of the Black Sea by Nordic immigrants. In the fourth century CE, Bishop Wulfila translated part of the Bible into Gothic, which died out in the sixteenth century. The most important current West Germanic languages are English (recorded in inscriptions since the fifth century and in literature since the eighth century CE), German with its dialects, as well as Flemish, Dutch, and Frisian.

(7) The Armenian branch, known since the fifth century from a translation of the Bible into classical Armenian. This is now spoken mainly in Armenia in the Caucasus and in eastern Turkey.

(8) The Tocharian branch, an extinct language known from two dialects (A and B) once spoken in Xinjiang or Chinese Turkestan. It is recorded in Buddhist texts dating from *c*. 600–800 CE.

(9) The Balto-Slavic branch, divided into the Slavic (or Slavonic) and Baltic languages. A translation of the Bible into Old Church Slavonic or Old Bulgarian from the ninth century CE is the oldest record of Slavic languages, which comprise South Slavic (modern Bulgarian, Slovenian, Serbo-Croatian, and Macedonian), West Slavic (modern Polish, Czech, and Slovacian), and East Slavic (modern Ukrainian, Belo-Russian, and Russian). The Baltic languages include the extinct Old Prussian (with some records from 1300–1600 CE), and modern Lithuanian and Latvian (with a literature since *c*. 1500 CE).

(10) The Albanian branch, spoken in Albania, Bosnia, and northern Italy. This is known in two dialects and has been recorded since the fifteenth century CE.

Scholars are unanimous that the Anatolian branch was the first to separate from the IE protolanguage. It is the only branch to preserve the so-called laryngeal phonemes that have been reconstructed for Early PIE. The other branches appear to have emerged from a Late PIE linguistic community, which disintegrated suddenly, dispersing in different directions. Many scholars think that Tocharian is the most archaic of the Late PIE languages.

4

The Indus Civilization

In 1924, Sir John Marshall, Director General of the Archaeological Survey of India, announced to the general public the discovery of a previously unknown Bronze Age culture. He named it the Indus civilization, because the finds came from two sites in the Upper and Lower Indus Valley, Harappa (near Lahore in the Punjab) and Mohenjo-daro (in Sindh), 600 km apart.

However, an archaeological culture is often named after the site of its first discovery. In this case, the site of Harappa had been described, by Alexander Cunningham, the first Director of the Archaeological Survey of India, as early as 1875. So "Harappan culture" has often been used, instead of "Indus civilization," to embrace both the earlier, developmental phase of the civilization and its mature phase, which is dated to *c*. 2600–1900 BCE. This followed the realization by the archaeologist M. Rafique Mughal in 1970 that urbanization and many concomitant technologies began before the Mature Harappan phase during the Early Harappan phase dated to *c*. 3200–2600 BCE; the term previously used for this earlier period, Pre-Harappan, did not convey the sense of close cultural continuity between the Early and Mature Harappan phases. It now appears that during a short transition period, *c*. 2600–2500 BCE, various Early Harappan cultures were largely transformed into the relatively unified Indus civilization.

Excavations at the sites of Mehrgarh, Nausharo, Sibri, and Pirak have provided an unbroken cultural sequence from about 7000 to 1000 BCE (Jarrige et al. 1995). These places were strategically located close to the Bolan Pass (connecting the Lower Indus Valley with the highlands of Baluchistan) on the ancient route to Afghanistan, the Iranian plateau, and Central Asia. The Mehrgarh cultural sequence has made it possible to understand the mutual relationship of the various small local Neolithic and Copper Age cultures of the Indo-Iranian borderlands, to follow their gradual evolution, and to sketch their migration to the Indus Valley and beyond so as to become Early Harappan cultures.

Variant Early Harappan cultures existed in the valley around Quetta (Damb Sadaat culture); in southern Afghanistan around Kandahar (Mundigak culture); in southern Baluchistan and southern Sindh (the Kulli, Nal, and Amri cultures), in the eastern plains of the Punjab, Haryana, and Uttar Pradesh (Ravi-Hakra and Sothi-Siswal cultures); and in nearly the whole Indus Valley (the Kot Diji culture) (Possehl 1999) (Fig. 4.1). Some of

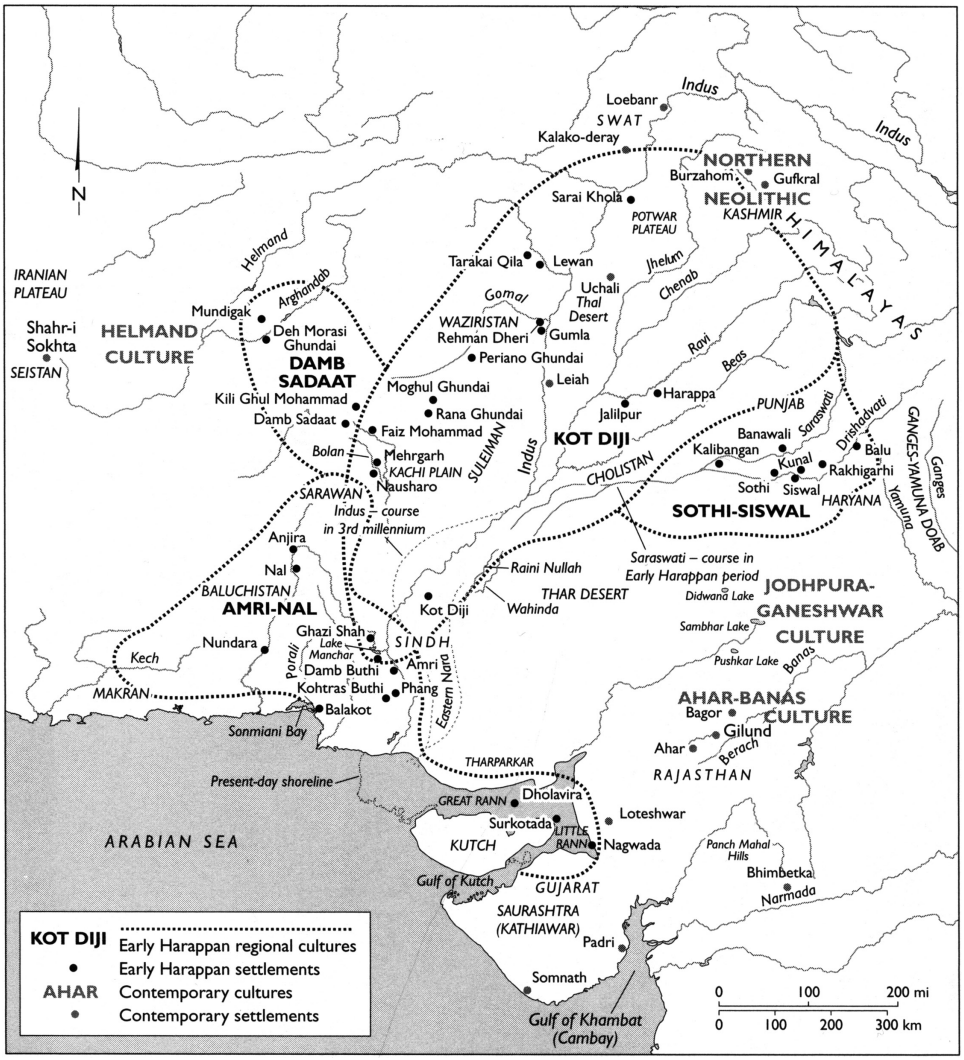

FIGURE 4.1 The Greater Indus Valley during the Early Harappan period, *c.* 3200–2600 BCE. After McIntosh 2008: map 1. © ABC-CLIO Inc.

these Early Harappan cultures continued to exist after the formation of the Indus civilization: the Kulli culture in southern Baluchistan, the Late Kot Diji culture in the northernmost Indus Valley and the Anarta tradition of Gujarat (derived from the Amri-Nal cultures). The post-Harappan Copper Age cultures of Rajasthan, the Deccan, and the Upper Gangetic Valley have a predominantly Harappan ancestry (Fig. 4.4).

The Indus Valley, with its wide plains watered and fertilized by annual floods, permitted cultivation on a larger scale than the mountain valleys of the borderlands. Yet the valley was not colonized immediately, for its environmental conditions also posed difficulties. Habitations had to survive the floods, which often required building on raised foundations. Villages started spreading, tentatively, from the piedmont to the plains as early as 3800 BCE.

With gradually increasing social skills and technological advances came walled towns on a grid pattern in the Early Harappan period. Where before, in the Neolithic and Copper Age villages, people had stored grain in communal granaries, now they stored it in large storage jars kept in separate houses. The novel concept of private ownership is also suggested by pot marks, and the adoption of stamp seals with geometrical motifs for administration. Cattle pulled plows in the fields: furrows excavated in the Early Harappan level at Kalibangan show the same pattern as today, running in two directions at right angles to each other (nowadays sown with two different seeds, horsegram and mustard). Transport was facilitated by ox-carts, still the most important vehicle in the South Asian countryside; its numerous representations in clay-model form were the Harappan counterpart of present-day model cars for children.

The Early Harappan cultures had overland trade contacts with southern Turkmenistan and with the Iranian plateau, where the Proto-Elamite culture (*c.* 3200–2600 BCE) had spread widely. Typically Proto-Elamite bevel-rimmed pottery comes even from Mir-i Qalat in Pakistani Baluchistan (Besenval 2011). Contact with Proto-Elamite people may have given Early Harappans the idea of creating a writing system, for the foundations of the Indus script were laid in late Kot Diji times, although the script itself bears scarcely any resemblance to the Proto-Elamite script.

The Early Harappans already possessed most of the basic cultural constituents of the Indus civilization. In the Mature Harappan period these became more refined and were applied on a grand scale. Early Harappan artifacts are clearly distinguishable from Mature Harappan ones on the basis of form and style. The most characteristic features of the Indus civilization include the following:

- the fully developed Indus script;
- finely carved stamp seals with writing and/or an animal or some other iconographic motif mostly, usually made of soft soapstone hardened by heating;
- standardized measures, including cubic weights made of chert carefully cut and polished, employing a combination of the binary and decimal systems, in the ratios 1/16, 1/8, 1/6, 1/4, 1/2, 1, 2, 4, 8, 16, . . . 800;
- the large-scale use of burnt brick, standardized in size, with the ratio 1:2:4 the most effective for bonding;
- exquisite lapidary art, featuring highly developed microdrilling of very long beads made of hard carnelian, decorated with chemically stained motifs.

We do not know exactly where the Indus civilization came into being. But it is clear that it spread quickly over almost the entire Early Harappan area and even beyond (Fig. 4.2). The transitional period (2600–2500 BCE) may not have been altogether peaceful, for several Early Harappan towns were burned down and resettled in Mature Harappan fashion. Because rather few bronze weapons have been found, the Indus civilization has been imagined as being an exceptionally peaceful place, yet it seems unlikely that it could have dispensed with armed forces to maintain law and order, and as a defense against outside attack. Bows and arrows made of cane appear in Indus art but are hard to trace in the

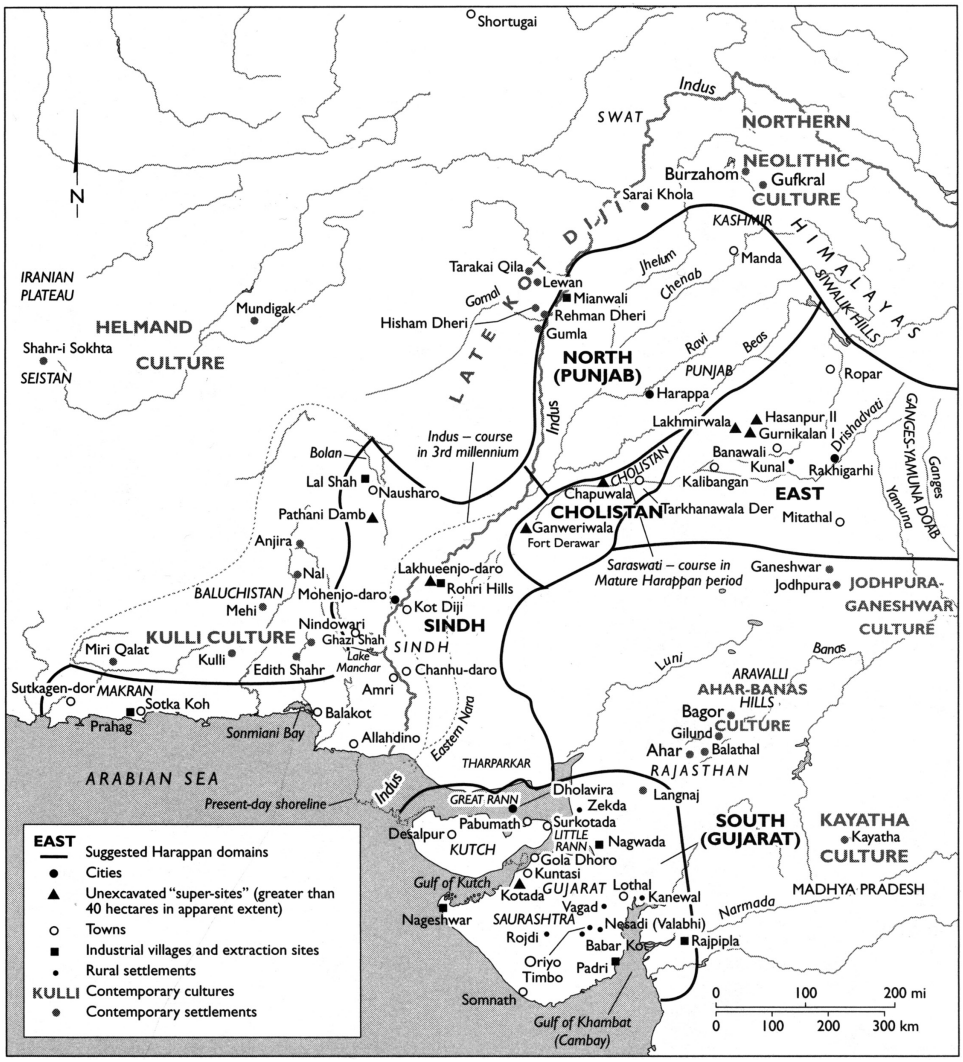

FIGURE 4.2 The Greater Indus Valley during the Indus civilization or Mature Harappan period, *c.* 2600–1900 BCE. After McIntosh 2008: map 2. © ABC-CLIO Inc.

archaeological record. They were the weapons of Indian soldiers in the fifth century BCE, according to Herodotus (7,65).

As during the Early Harappan period, the cities and their specialized craftsmen were fed by farmers and pastoralists. Humped cattle, sheep, and goats were kept and wheat and barley were cultivated from Neolithic times. In the Mature Harappan period the number of cultivars increased, and two growing seasons were introduced where feasible: barley, wheat, oats, lentils, beans, mustard, jujube, and linen were grown in winter; millets, cotton, sesamum, melons, jute, hemp, grapes, and dates in summer during the monsoon.