The publisher gratefully acknowledges the generous support of the Ahmanson Foundation Humanities Endowment Fund of the University of California Press Foundation. The publisher also gratefully acknowledges the support of the Harvard Historical Series.

Deep History
The Architecture of Past and Present

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UNIVERSITY OF CALIFORNIA PRESS
Berkeley - Los Angeles - London
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Preface

All arguments about the past are shaped by rhetorical and narrative devices. It is not just an assessment of “the facts” that helps us decide whether a historical account is convincing: facts emerge as such, and acquire their power as evidence, within narrative structures. The story of an empire’s rise or a nation’s collapse may be filled with dates and textual sources, which can be right or wrong, reliable or dubious; but the story’s integrity as history also depends on a deeper architecture of likenesses. Empires and nations, though they consist of millions of individuals who do not know each other, are often treated as if they were physical bodies. They are born, mature, and die in history books. They have (or appear to have) character traits; they make decisions, acquire friends and enemies, form and dissolve unions. They are compared, in countless ways, to persons, families, and bodies. At a certain level we know these likenesses are metaphorical, but doing without them is difficult. When the metaphors seep into everyday usage among historical actors, we can even say that they shape the evidence and events that historians choose to write about. Metaphors determine what goes into a historical argument, what is left out, and how new forms of historical argumentation can be developed. What matters to good history writing is to develop a knowing relationship with the narrative motifs and metaphors that we employ.

This is a book about the deep history of humankind, a domain of inquiry that extends millions of years into the past. Although it might seem the perfect subject matter for historians, this vast time-space was left out of
most historical writing almost as soon as it was discovered. Humans have always been interested in their origins, but the deep past, as typically understood by modern historians, is never deeper than antiquity and is sometimes positioned in an even more remote era. Awareness of a time before antiquity became acute only in the nineteenth century, as the Darwinian revolution displaced the widely shared belief that the world was only 6,000 years old. The new age that suddenly opened up before Eden, dividing the human past into long and short chronologies, soon became the object of systematic study. Yet deep time seemed impervious to the methods of conventional historical writing, a state of affairs captured in the word coined to describe this newly remote past: prehistory.

As this volume demonstrates, the assumptions that initially conspired to mark off prehistory as a time before history are still very much with us. At stake is a methodology based on written evidence, along with a commitment to a powerful set of narrative motifs, most of them grounded in notions of progress and human mastery over nature. Together these commitments have made the deep past an unsettling place for academic historians. Thanks to the industrious work habits of archaeologists and paleoanthropologists, prehistory today is carefully mapped, meticulously dated, and creatively analyzed. In recent decades, discoveries about the evolution of humans and related hominin species have been accumulating thick and fast. But for all that, the deep human past remains curiously off limits to many anthropologists and historians, even to those interested in the big questions of what it means to be human. In fact, the chronological domain of the research explicitly described as historical has narrowed dramatically in scope over the past century, even as our knowledge of human prehistory has expanded. Most historical research is now concentrated in the centuries that followed the global expansion of the European powers, in times vaguely described as “modern,” in societies described as colonial and postcolonial.

This volume grows out of our discomfort with this trend and our desire not only to explain it but also to create alternatives to it. We do not think that the systematic neglect of deep history among historians and anthropologists—two fields that make the human past their business—is a product of ignorance or disdain. Nor is it a simple byproduct of specialization. It arises instead from the architecture of historical arguments, from the narrative motifs and analogies preferred by the writers of history. A century ago, the simplistic notions of progress and the misapplications of Darwinian evolutionary theory that dominated this field, along with a growing concern to make all premodern civilizations inconsequential except, perhaps, as living evidence of Europe’s primitive past and a way of understanding its rise to global superiority. All that has changed. Historians and anthropologists today routinely invoke a new set of patterns, such as diaspora, subalternity, hegemony, resistance, commodification, and agency, to characterize the intricate feedback patterns that accompanied the emergence of the modern world system. The triumph of the global perspective shows how, through concentrated effort, the very patterns of historical writing can be transformed. In this transformation, the formerly irrelevant is made intensely relevant not through a new set of facts but through a new set of intellectual devices for describing the arc of change. Yet the very success of the global paradigm has revealed the continuing absence of the patterns and forms that might allow us to recuperate the deep human past.

The goal of this book is to offer a set of tools—patterns, frames, metaphors—for the telling of deep histories. These include kinship, fractional replication, exchange, hospitality, networks, trees, extensions, scalar integration, and the spiraling patterns of feedback intrinsic to all coevolutionary processes. Skillfully deployed, these frames and the narratives and evidence they create offer a dynamic of connectedness that can render deep time accessible to modern scholarship, thereby bringing the long ages of human history together in a single story. In offering these analytical innovations, we do not insist on the jettisoning of narrative patterns that describe histories of origin, birth, or decline. Instead, we want to call attention to how these narrative devices, sometimes unwittingly, evoke transitions from nature to civilization, from biology to culture, from traditional society to modernity. These devices may work in a limited array of circumstances. As general means for the relating of deep history, however, they are highly problematic. They tend to postulate an age-old, unchanging, or primal humanity that is awakened from its slumber by a stimulus external to this “state of nature.” The external force might be culture, language, civilization, or even climate, but the creationist roots of this imagery are not hard to discern. The move from nature to culture, from prehistory to history, brings to mind the clay that is given life by the breath of God. In almost all cases, this is bad science, and it is equally bad history. There are better ways to account for change.

The editors of this volume, Andrew Shryock and Daniel Lord Smail, belong by disciplinary training to the tribe of humanists and social scientists. Even so, we share the fascination for the deep past that animates our colleagues in archaeology, human evolutionary biology, historical
linguistics, genomics, and primatology. Concerned by an apparent erosion of historical interest in eras predating the modern, and inspired by a belief that history could be written on much larger scales, we invited a number of colleagues to join us in January 2008 for a workshop at the Radcliffe Institute in Cambridge, Massachusetts, to begin discussions of how we might develop a new architecture for human history. In May 2009 a nucleus of authors returned to the Radcliffe Institute for another workshop to sketch out the chapters that appear in this volume. We decided early on not to produce single-authored chapters. Though this approach would have been more efficient and certainly less time-consuming, it would not have allowed us to achieve our aim of transcending specialization. Instead, we grouped ourselves by theme and tackled our subjects collectively, generating chapters that are genuinely transdisciplinary. By dissolving the monographic voice and developing a collaborative one in its place, we sought to escape the untidy polyphony that can mar collections of this kind. We very much hope that readers will hear unexpected intellectual harmonies in this volume. This effect is the result of many conversations, robust editing, and tremendous goodwill on the part of all involved in this project.

Our debts of gratitude go, first and foremost, to the Radcliffe Institute for hosting two wonderfully productive seminars, and especially to Phyllis Strimling and Allyson Black-Foley, who handled all the arrangements for the workshops with impeccable attention and efficiency. The participants at the first workshop included Ann Gibbons, Sarah Blaffer Hrdy, Christopher Loveluck, Michael McCormick, Gitanjali Surendran, Christina Warinner, and David Sloan Wilson; their enduring influence has shaped the volume in many important ways. Colleagues and students too numerous to name here have read proposals or chapters and helped with conceptual issues and references; we thank all of them for their enthusiasm as well as their words of advice, caution, and correction. Jennifer Gordon helped us put the illustrations in order, and Mary Birkett designed several of the book’s figures. Niels Hooper, Eric Schmidt, and Erika Bulky offered wise editorial counsel. Finally, we are deeply appreciative of our entire author team, whose patience, thoughtfulness, and dedication have been exemplary. Our labors have been shared in the most profound way.

We gratefully acknowledge a publication subvention provided by the Department of History at Harvard University, as well as financial contributions provided by the Arthur F. Thurnau Charitable Trust at the University of Michigan.

A Note on Dates

One of the obstacles to bringing the deep past into human history lies in the diversity of customs for reckoning time and the precision that we can bring to the task. European historians have been using calendrical dating at least sporadically since Bede (d. 735) wrote his treatises on the reckoning of time, and they have used dates consistently from the twelfth or thirteenth century onward. The time revolution of the late 1860s, which decisively broke the grip of the short chronology of the Judeo-Christian calendar, made deep human time a historical reality. Even so, it was a reality that remained undatable for at least a century. Instead, archaeologists and paleoanthropologists sorted early human sites, civilizations, fossils, and artifacts into chronological bins based on practices of relative or period dating that did not require absolute time scales. The edges of the bins were defined either by geological horizons (Miocene, Pleistocene, Holocene) or changes in the dominant technologies (Paleolithic, Neolithic, metal). The latter were further subdivided into coarse gradations (Lower, Middle, and Upper Paleolithic in the case of chipped-stone technologies) and even finer gradations within them (e.g., Achéulean, Magdalenian), in much the way that social scientists might speak of the interwar period (1918–40) as a subdivision of the modern era.

Nowadays, the edges of the bins are also defined using absolute dates. The dates may change either because of improvements in estimating ages by scientific means or because the contents of a chronological period are
no longer compatible with models of change and development. Similar things happen when European historians stretch the edges of the nineteenth century so as to make “the long nineteenth century,” a terminology that has allowed them to conveniently bracket a historical era running from 1789 to 1914.

The use of the word Paleolithic, by convention, has been largely confined to European contexts. With reference to other sites, notably in Africa, archaeologists have continued to use plain English (Early Stone Age, Middle Stone Age, Late Stone Age) rather than Latin neologisms. Because the tools and technological systems on different continents do not necessarily overlap in time, and certainly did not develop in lockstep, it is particularly difficult to correlate evolutionary developments across continents. Finally, the chronology of human speciation, which has become increasingly precise thanks to better dating techniques and to genetic modeling, does not coincide neatly with dates associated with tool types and technological transitions. This is because human physiology and behavior can evolve more or less independently of one another.

When absolute time scales are used for dates, some people specify years “BP,” or “before the present,” the technical expression developed for radiometric dating. Others use the more casual initials “ya,” for “years ago,” which is consistent with the concept of BP. Because it is tedious to write out “million years” and “thousand years,” these expressions are commonly abbreviated using “M” or “k” (for example, the earliest stone tools currently known date to around 2.6 Ma). Absolute dating, because it is calendrical, bears some similarity to the Common Era (or Anno Domini) system used by historians of the past two thousand years. An obvious difference between CE (Common Era) and BP is that the former counts up toward the present, whereas the latter counts down. In addition, dating systems in the archaeological literature covering the past ten thousand years or so often alternate between BCE and BP. The existence of a two-thousand-year gap between BCE and BP dates—an event that took place 10,000 BP is dated 8,000 BCE—requires a certain agility on the part of readers, somewhat like converting between the metric and Anglo-American systems of measurement.

The chronology employed by students of deep human time depends on where they work and the intellectual tribe to which they belong. Like any speakers of dialect, paleoanthropologists can easily move in and out of different conversations. To historians and some anthropologists who are used to dealing with calendrical dating, however, it can seem odd that earlier fields do not use the apparent convenience of absolute dating more often. The reason for this is that the fields of paleontology, paleoanthropology, and archaeology developed their chronological systems long before the many innovations in radiometric dating in the 1950s that made absolute dating possible. Period dating, in point of fact, is quite useful. European historians have never ceased using words like ancient, medieval, and modern, let alone phrases like the long nineteenth century, to bracket interesting cultural units. In considering the structure of historical arguments, some readers might find it convenient to assume that the designations of the Lower, Middle, and Upper Paleolithic are roughly analogous with the terms ancient, medieval, and modern. Translating the terms in this way gives practitioners in one field a rough sense of how to navigate the other.

Period dating remains essential, moreover, because no paleoanthropological dating technique is ever wholly secure, even when its physical or sample requirements are met. Dates derived from the analysis of tree rings soon showed that early radiocarbon dating for some periods was consistently biased. Analysis of trapped gases in fine annual layers in ice cores from Greenland has shown us that the ratios of the different isotopes of atmospheric carbon, ratios that are so essential to radiocarbon dating, are not constant but vary in different periods. Humans’ greater fuel use over time is partly to blame, but natural variations in atmospheric carbon occurred even in remote periods. Calibration curves, which are being constantly updated, allow labs to generate ever more accurate dates. Even so, radiocarbon dating does not offer the literal precision provided either by human calendars or by the natural calendars embedded in the growth rings of trees, in coral, or in the very fine layers that may form at regular intervals at the bottom of lakes or oceanic basins. Radiocarbon dating describes a probable date, expressed in intervals of centuries or millennia and hedged about with a margin of error. What is more, the technique is accurate only within the last 50,000 years. Advances in optically stimulated luminescence (OSL) have extended dating on sediments that contain artifacts back to 120,000 years, but the age estimates have large error margins, as do those produced by electronic spin resonance, another form of radiometric dating that can be used on dental enamel dating from as far back as 2 Ma. The techniques for dating necessarily vary as we look further back in time, and the error margins and chronological intervals typically grow larger.

In this book, we have followed the custom of using geological periods (e.g., Pleistocene) when referring to climate, geology, or environ-
ment, and archaeological periods (e.g., Paleolithic) when referring to human societies. Figure 1 presents a concordance of dates following different disciplinary styles, referring to periods mentioned in this book. Representing human time, of course, is a bit like representing the solar system: the spans are so vast that absolute scales cannot hope to represent the information in a readable way. For this reason, the figure adopts a log scale to represent time; that is to say, the time intervals represented on the X axis grow progressively larger the further back in time you go. Where the information itself is concerned, there is still much room for disagreement. Every new discovery is capable of pushing the known boundaries of important evolutionary developments to the more recent or the more ancient end of several time scales. Researchers at work on questions of human evolution must conceive of time and temporal boundaries with a pencil in one hand and an eraser in the other, constantly refining their assessments according to new technologies of measurement as well as new data. This is not to say that we know nothing about when things actually happened in the distant past, only that we are talking about events and processes that transpired in very deep time, for which crisp dating is seldom reasonable or even possible to expect.
PART ONE

Problems and Orientations
History is a curiously fragmented subject. In the conventional disciplinary structure of academia, the study of the human past is scattered across a number of fields, notably history and anthropology but also folklore, museum studies, philology, and area-studies programs. Together, these fields constitute a dense layer cake of time. The bottom layer, by far the thickest, is grounded in deep time. The deep time of a discipline is not a specific date range or era: it is simply the earliest period to which the discipline pays attention. Among archaeologists and human evolutionary biologists, deep time is represented by the paleoanthropology of the simple societies of the Paleolithic, from the earliest known stone tools (dated to 2.6 Ma) to the origins of agriculture. Among historians, the deep time of the discipline is located in Greco-Roman antiquity. Though the Paleolithic and the ancient world are dramatically offset in absolute time, each provides the bedrock that supports disciplinary narratives. The middle layers of the cake are given over to the archaeology of complex societies and, among historians, to the study of “early modern” societies. On the very top is a veneer of modern frosting. Seldom more than a few centuries deep, this upper layer is what attracts the interest of most fields of contemporary historical research and almost all fields of cultural anthropology.

The entire span of time may come together in teaching: in the grand sweep of general anthropology, say, or in survey courses of world history. In their own research, however, most scholars limit their work
In the wake of the Darwinian revolution, the problem of human origins was transformed from a matter of speculative philosophy into a scientific research program. This transition, which required a radical reassessment of the older, biblical cosmology, was initially made intelligible by linking it to ideas of progress that had proliferated during the Enlightenment. Over the course of the twentieth century, which witnessed two world wars and the collapse of the European colonial order, historians and anthropologists grew increasingly skeptical of Enlightenment ideas, and Victorian-style social evolutionism was rejected as a justification for racism, class privilege, and global imperialism. In cleansing historical and cultural analysis of their nineteenth-century ideological baggage, most of the high modern (and postmodern) versions of cultural anthropology and history turned their backs on the deep human past, leaving problems of evolution to the archaeologists, paleontologists, and historical linguists.

The goal of this book is to remove the barriers that isolate deep histories from temporally shallow ones. These barriers have a complex history of their own, but they need not dominate future studies of the human past. Moving them aside solves multiple intellectual and political problems, and this renovation project is not as difficult as it might at first seem. The necessary analytical tools already exist. Some, like genetic mapping and radiocarbon dating, are recent innovations; others, like genealogies, bodily analogies, and predictive modeling, are older than written history itself. The gap between deep and shallow history, we believe, can easily be bridged; indeed, great efforts must be exerted simply to keep the gap in place. What motivates these efforts? How did they develop? And why do so many scholars think it is important to keep prehistory in its place?

TIME'S STRAITJACKET

The fragmentation of historical time is not inherent to the study of the past. It was produced by highly contingent historical trends that were triggered and amplified by the time revolution of the 1860s, when the short chronology, which envisioned a world roughly 6,000 years old, was abandoned as a geological truth, and human history began to stretch back into a limitless time before Eden. Before the 1860s, the human and the natural sciences had constituted a single field of inquiry. This field was framed by religious tradition and organized in accord with the universalizing framework of the Book of Genesis, in which history
and geology are coeval. Knowledge production in all the societies of the Jewish, Christian, and Muslim worlds was contained within this totalizing model of creation.

Following the time revolution in Europe, however, this unified vision of human history fell apart. The chronology of the past fractured at precisely the point where human prehistory was being grafted onto ancient and modern history, which now seemed chronologically recent. By all appearances, a history long beholden to scriptural understandings of time was incapable of absorbing the fact of deep time. It is not difficult to find nineteenth-century historians who circled the wagons around the short chronology and declared the new, bottomless time to be anathema. Because respected scientists such as Georges Cuvier and Louis Agassiz refused to accept the new timeline, it is hardly surprising that many rank-and-file historians also proved skeptical—or, in some cases, openly resistant. But reaction to the time revolution was generally more complex. A short chronology is not, in fact, intrinsic to the cosmology of the religions of the Near East. The authors of Genesis measured time as a succession of life spans and genealogies; the New Testament and Qur’an are devoid of what we would now call calendar dates. The short chronology was in fact an artifact retroactively imposed upon scriptural traditions. This retroactive dating occurred as generations of Jewish, Christian, and Muslim chroniclers struggled to bring sacred texts into alignment with the solar and lunar calendars they had created to keep track of ritual obligations and to record the movement of creation through time. Ironically, it was the careful work of premodern and early modern historians, not the teachings of the prophets, that gave Abrahamic chronology its brittle precision, a level of detail that could date the first day of creation to the eve of Sunday, October 23, 4004 BC. This brittleness would cause it to snap when placed under stress by the intellectual trauma of the time revolution.

In a larger sense, however, the demise of the short chronology made no difference to practicing historians. In the decades following the Darwinian turn, there were historians who looked with curiosity at the strange new terrain on the other side of Eden, and, later, historical visionaries who advocated for a reunification of deep time with history. Yet the gap grew so wide that it became nearly unbridgeable. Lacking written texts, practitioners in the emergent fields of archaeology and paleoanthropology had to develop new methods of inquiry designed to tease meaning out of scattered evidence and refractory sources. The new discipline of history, in turn, adhered to the very chronology that historians fashioned for themselves in their vain attempts to apply a chronology to the Bible. As later chapters show, the questions that historians of the nineteenth century asked about the origins of human languages, races, agriculture, cities, and nations were often defined in specific relation to the Book of Genesis. This is hardly surprising. The European scholars best suited to become academic historians when the discipline arose in the nineteenth century were heavily invested in intellectual traditions anchored in a biblical worldview, to which a long pedagogical tradition had added Greek and Roman learning. It is hard to imagine the works of such luminaries as Leopold von Ranke or Jacob Burckhardt outside this milieu.

Yet neither inertia nor the prestige of older intellectual traditions can explain how time got bound up in the straitjacket created by disciplinary history at the beginning of the twentieth century. The decision to truncate history was a deliberate intellectual and epistemological move, bound up with the fate of the discipline itself. By the late nineteenth century, the proud new discipline of history was shouldering its way into the academy; and to justify its presence, the field adopted as its signature methodology the analysis of written documents, “No documents, no history.” as Charles Langlois and Charles Seignobos declared in their 1898 manual of historical study, probably the most important of its kind. The methodology they advocated sought to assess human intentions as revealed in textual evidence. Their peers used the manual to train students in the art of ferreting out the truth that lies behind the creative omissions and downright fabrications intrinsic to historical documentation. Humanity’s deeper history had no documents of this kind. This critical absence of data made the deep history of humanity methodologically unthinkable.

Oddly enough, this epistemological package was also gradually accepted by cultural anthropologists, whose chronologies tend to contract whenever they attempt to historicize their discipline. The classic instance is Europe and the People without History, in which Eric Wolf tried to pry anthropology out of the ethnographic present in which he believed it was hopelessly stuck. To bring “the people without history” into the domain of proper history, Wolf portrayed European expansion as a global interaction of human populations organized by kin-ordered, tributary, and capitalist modes of production. Wolf was not especially interested in how the kin-ordered and tributary modes had emerged in deep time; instead, he wanted to know how these modes of production were taken into a world system dominated by capitalism. As a result, al-
though Wolf's historical analysis is based on social forms that developed sequentially over tens of thousands of years, it is limited to roughly the last five centuries. The evidence he used to historicize the world's aboriginal peoples would satisfy the criteria devised by Langlois and Seignobos, and Wolf was unapologetic about the resulting Eurocentrism of his project. What one learns from "the study of ethnohistory," he noted, "is...the more ethnohistory we know, the more 'their' history and 'our' history emerge as part of the same history."7

Wolf's intent was not to cut ethnography off from its deep historical roots but rather to open it up spatially. Yet his eager embrace of a history based on textual evidence led immediately to temporal foreshortening, and his five-hundred-year frame is in fact vast when compared to studies of his work inspired. It is now virtually axiomatic that any anthropological approach advertising itself as "historical" will focus on the recent past. Its subject matter will be modern or postmodern, colonial or postcolonial. Rarely is this focus perceived as narrow. It is seen as vital, and engagement with events and societies located before European expansion, before textual evidence, is often considered politically irrelevant unless such events and societies can be interpreted—and some poststructural theorists would argue that they can only be interpreted—through intellectual lenses crafted during the great shift to colonial and postcolonial modernity. Otherwise they are best left to classicists, medievalists, and Orientalists. If the past in question predates the emergence of literate state societies, it falls under the jurisdiction of archaeologists and biological anthropologists, whose methods of inquiry are scientific, not historical. This pattern is visible across the academy, and attempts to disturb it quickly generate resistance on all sides.

**MAN AGAINST NATURE**

Why does disciplinary history, as a set of methods and motivations, so predictably conform to this epistemological grid? The blame lies with a commitment to human exceptionalism, a sensibility that survived the Darwinian revolution largely intact. As creation gave way to nature, the assumption that humans are part of nature, and that human systems are natural systems, slowly took hold in the biological and behavioral sciences. Among historians and cultural anthropologists, however, the equation of cultural systems with natural ones has never been easy, nor has it been easily historicized. Both difficulties, we believe, are related to the lingering power of the metaphors that dominated history writing in the nineteenth century. The human story, in this worldview, is centered on the conquest of nature and the birth of political society. A passage from one of the works of the great French historian and archivist Jules Michelet (d. 1874) captures the logic perfectly: "When the world was born there began a war that will last until the world's end, and this is the war of man against nature, of the spirit against the flesh, of liberty against determinism. History is nothing but the story of this endless conflict."8

The claim made here was hardly new. The Judeo-Christian tradition has long celebrated human stewardship over nature. What gives Michelet's remark special poignancy is the fact that, even in his own day, there was a growing awareness that geological time was far older than human time and that human time itself might be deeper than hitherto imagined. A quarter of a century later, human time was known to be long indeed, and by the last quarter of the nineteenth century, the history of humanity threatened to merge insensibly with natural history. In this changing context of time, the need to mark the break between animal and human took on special urgency. Michelet, whose opinions on this matter reflected those of his day, had already divined the solution to the conundrum. Animals live in harmony with nature. Humans, by contrast, are at war with nature. In the pious bromides of early-twentieth-century science writing, evident in a 1912 work modestly called *The Conquest of Nature*, "barbaric man is called a child of Nature with full reason. He must accept what Nature offers. But civilized man is the child grown to adult stature, and able in a manner to control, to dominate—if you please to conquer—the parent."9 In this act of emancipation, in this shift from passivity to agency, history itself was created.

The conquest of nature, in turn, was tightly linked to the origins of political society. In the social thought of the eighteenth century, the natural unit had been the family—or, for some, the solitary individual. Everything humans had built on top of this natural substrate, and especially the newly insistent nation-states of nineteenth-century Europe, could be treated as historical artifacts and therefore beyond nature. The history that came into being, and loudly proclaimed its own objectivity, was in many ways an apology for nationalism.10 The new history was for the nation-states of late nineteenth-century Europe what the Torah was for the kingdom of David: a genealogy (fictitious or otherwise) designed to anchor the imagined community in the past, give it legitimacy, and lend weight to its grievances and aspirations. It is thanks to the nation-building enterprise, in fact, that we have medieval European history, for few nations (with tragic and bloody exceptions, including
Napoleonic France and Hitler’s Germany) sought to identify explicitly with the empires or city-states of antiquity. If the task of history was to provide the ontogeny of a single nation, that is to say a description of how the nation was born and came, through many trials, to adulthood, there was little use for Greece or Rome—outside Greece and Italy, of course—except in the lingering sense that classical antiquity belonged to a privileged Western heritage that justified the superiority of Occidental empires. Even less use was there for the periods and social forms that preceded the ancient world, except to provide a holding tank for all that was not civilized or part of the modern story—what Michel-Rolph Trouillot calls “the savage slot,” a time and space set aside for the world’s backward and non-Occidental peoples. As subsequent chapters show, this worldview was heavily influenced by the ideas of Georg Wilhelm Friedrich Hegel, a philosopher of history who, like his near-contemporary, Michelet, saw the human story as one of hard-won progress, as a steady movement out of a state of nature into political agency and awareness.

In the twentieth century, disciplinary history began to roam well beyond the limits of the nation-state. Historians took up the history of ideas, civilizations, and economies. In addition, disciplinary history began to tackle subjects rigorously excluded from the history of nations: family, women, peasants, workers, and eventually the non-West, non-whites, the alternatively sexual, and the differently abled. Yet history written in the Hegelian mode has had the last laugh. The history of the disempowered could have proceeded by denying agency to white male Western heteronormative political actors, the God-substitutes excised from history by Charles Darwin. But it did not. Instead, the new history has proceeded by attributing agency to subalterns located in every branch of the human family. The universal attribution of agency has become a recipe for historical research, as scholars, trapped in Hegelian logic, create new subjects by incorporating ever more voices.

Politically, the consequences of this trend have been enabling. Where the straitjacketing of time is concerned, however, the consequences have been otherwise. In the hopes of granting speech and agency to those on the receiving end of European history, we have transformed the world’s subalterns into characters of a suspiciously uniform type. The very people whose inclusion was meant to be a triumph of diversity have been homogenized by theory. The accelerating pace of agency attribution, moreover, has led many into the mistaken belief that agency itself is a creation of modernity. Hegel had attributed agency to progressive males all the way back to the origins of the state. This was the whole point of his formulation: to replace divine providence and the guiding hand of God with the far-seeing vision of wise leaders. Hegel, in other words, never escaped the instincts of sacred history; he just knocked the agent in chief down a peg. But here is the rub: the extension of agency to modern subalterns is meaningless if modernity itself was created by the powerful men of the past. To evade this paradox, one could deny Hegel’s bias and extend agency to all past actors. But what if this gesture is practically impossible? What can one do if the vast majority of premodern historical sources were generated by the very men whose thoughts and deeds they typically celebrate? Given this paradox—a paradox that historians generated for themselves by adopting for their discipline a textual methodology—it is enormously tempting to pretend that the remote past belongs to nature, to a cultural reality that cannot be fully historicized, and thereafter to ignore it.

As a result of this bind, the great questions that used to cut through the layer cake of time are not being asked. Instead, historians and cultural anthropologists turn their attention to the world around them, treating it as a secular creation even newer, empirically, than the sacred world of Genesis. In recent decades, the short chronology of disciplinary history has continued to shrink. As measured by professorships, course offerings, dissertation topics, and publications, the weight of knowledge production in cultural anthropology and history is now solidly centered in the centuries after 1750, as it is in the other human sciences. One measure of the erosion of historical time can be found in the tendency among historians to add metaphors of birth, origins, or roots to book titles and arguments. Use of this metaphorical complex has accelerated in the last two decades. If we could track the average birth date proposed in this burgeoning array of titles, it would in all likelihood be moving closer and closer to the present day.

**THE GROUNDS FOR MAKING A DEEP HISTORY**

The prospects for a reunion of the short and long chronologies within the human sciences seem rather grim, and it would be simple enough to frame this volume as a nostalgic story of loss and what might have been. Yet now, 150 years after the time revolution, the elements and frames necessary for writing a deep history of humankind may finally be falling into place. The field of big history, led by David Christian and Fred Spier, has already shown how the wholeness of time can be
woven into a compelling historical narrative. Thanks in part to the biological turn, scholars in all fields are now feeling the pull of humanity’s deep past. They fret about chronological constraints and issue calls for “evolutionary politics,” “evolutionary economics,” or evolutionary studies of the law. These approaches hold promise; however, many of them have adopted a form of analysis centered on the postulate of an evolved human psychology that shapes behavior in the present day. The logic deployed is distinctly reminiscent of the logic of the orthodox, Augustinian version of Christian theology, which also proposes the existence of an abiding human psychological condition that has profound latter-day effects: original sin. Though the neo-Augustinian trajectory of evolutionary psychology evokes the past, it does not provide a history. The two are very different things. When the past is simply a repository of the “natural,” it is not a historical past: it is instead a mythical or cosmological past, providing yet another mirror in which humanity can search for its own reflection. Such an understanding of the past has no room for contingency, no room for change, no way to understand the path-dependent nature of variation within systems.

It is difficult, though, to blame the purveyors of these models. Providing the missing history is the job of anthropologists and historians, not psychologists or behavioral social scientists. The chapters in this volume are designed to supply the historical frames that are, for now, absent in the new evolutionary approaches. Despite the apparent hegemony of Darwinian evolution among the educated classes, a great deal of unfinished business remains. The soft social sciences and the humanities have never really come to terms intellectually with human evolution. Early attempts to bring Darwinian models into social thought produced Victorian disasters. But the accumulation of knowledge about the human past has become so impressive that a rapprochement is needed. The natural-selection paradigm has enabled us to generate highly nuanced understandings not only of how the human lineage has evolved but also of how human social forms and cultural capacities have developed over long stretches of time. Many of the analytical techniques employed by archaeologists, evolutionary ecologists, and paleoanthropologists can in fact be applied to ancient and contemporary societies alike. In the anthropological sciences since the nineteenth century, the study of kinship and language has linked the short and long chronologies, and new fields, such as genomics, now allow analyses to move across great distances in time and space, following lines of genetic transmission that link living humans to ancestral populations. Absolute and relative dat-

ing techniques that first emerged in the 1950s have become increasingly precise and reliable, as have the transregional chronologies and models of long-term trends (from the development of toolkits to the transcontinental migrations of early humans) that have been worked out using these dating techniques. In short, the means to reconnect short and long histories have been in place for many years.

Meanwhile, historians have gradually abandoned the idea that the only thing to do with written sources is to sift through them in search of the motives and intentions of their authors. The skills necessary for data mining (and for reading between the lines) are now routinely taught. That unabashedly fictional sources can count as legitimate historical data is widely accepted as self-evident; few historians today find it necessary to defend the notion that literacy serves as a repository of social logics. Histories can be written from every type of trace, from the memoir to the bone fragment and the blood type. Moreover, the ongoing merger of history and social science has produced an intellectual world in which most scholars realize that intentions are social products, and the grounds for their production are largely beyond the control of individuals and their desires. In this realization, the methodological distinctions that once separated history from anthropology and archaeology all but disappear.

Yet translation problems remain. Scholars who study the deep past—let us call them paleohistorians for convenience—face numerous challenges when presenting their work to scholars who focus on more recent periods. These challenges include the unhelpful assumption that the deep past is best understood in relation to a fixed human nature or universal behavioral tendencies (such as “economizing,” “rational choice,” or “kin selection”). Also troublesome is the belief that certain cultural forms, such as “ethnicity,” are quintessentially modern and that similar processes of group identification are not found in the past. Paleo-historians do daily battle with the assumption that human prehistory is marked by long periods of behavioral fixity and cultural stasis, not variety and change. In addition to these problems of misunderstanding, paleohistorians contend with difficulties inherent to their own practice. The amount of material stuff available for analysis decreases dramatically as they move back in time, a trend that generates both recognition and bafflement. Often, it is not clear what ancient human artifacts signify. Is the design scratched into a piece of bone “symbolic”? Of what? Might it be a product of boredom? Might the symbol be apparent to us, but perhaps not to the maker of this ancient object?
Also, paleohistorians must be alert to powerful notions of progress and primitivism that color their work and determine how their findings are received and put to use in wider intellectual circles. The idea that the deep human past is best treated as a variant of biological science or natural history, and that evolution describes a strictly biological process rather than a social or cultural one, is another problem that arises in the field. Yet even developments as basic as bipedalism, hairless bodies, or concealed ovulation are implicated in complex assumptions about social life. Finally, paleohistory needs narrative and reconstructive storytelling. However much we may complain about the coercive, streamlining qualities of historical narratives, they do convey information in vivid and compelling ways. Paleohistory attracts the talents of numerous science writers: this fact reflects both the mass appeal of the field and its inaccessibility and overspecialization. A judicious use of narrative is needed to bring paleohistorians into dialogue with social science and humanities scholars.

The histories we present in this volume are meant to resolve some of these translation problems. They draw on the resources of all fields of history and anthropology to present a broad-spectrum history of hominins—that is, of humans and their immediate ancestors. For reasons of convenience, this history begins about 2.6 million years ago, when our hominin ancestors began to use tools that would later enter the archaeological record; but we also situate human bodies and social forms in the larger context of primate evolution, using genetic, bone, and behavioral evidence to extend our analytical reach back 6 to 8 million years, when our ancestors diverged from the ancestors of modern-day chimps and bonobos. Despite its immense time depth, the ensuing history is surprisingly similar, in substance, form, and trajectory, to the histories framed by the short chronology, with these exceptions. First, earlier periods feel stretched out by comparison to later ones, and the study of deep history emphasizes trends and processes more than events and persons. Second, the historical processes with which we engage, often enough, are not strictly calendrical: they have a logic that transcends the time and place of concrete example. Third, the arguments presented here, although evidentiary, are seldom dependent on what historians have typically considered evidence—namely, written texts. A deep history of this kind is thick with culture and epigenesis, even as itacknowledges the crucial role of biology, which is consistently woven into our accounts of human change over time. The result is an engagement with the human past that, instead of reinstating the old Hegelian distinction between natural and cultural existence, overturns the static imagery deployed in the nineteenth and twentieth centuries to deny historicity to the deep past.

**Patterns and Frames**

If this volume can lay claim to innovation, it will lie not in matters of theory or method but in the realm of imagination. What we intend to provoke in the chapters that follow is a shift in sensibilities, and our principal tool is the reframing of intellectual practices that have been prematurely sorted into separate boxes. These practices can be thoroughly reconfigured, even unified, when they are situated within much larger spatial and temporal frameworks. The novelty at stake is best expressed as one of scale, of the level at which a story can be imagined and then told using methods and assumptions already available to scholars who study the movement of humans through deep and shallow time. To create this more broadly encompassing field of analysis, we have constructed our own master narrative. It unfolds in four parts, each of which addresses, from different angles, the patterns and frames of a deep history.

The first, called “Problems and Orientations,” includes the arguments developed in this introduction, which stress the importance of deep history as an intellectual project, showing how the short and long chronologies of the human past came apart and have been kept apart by disciplinary practice. After explaining the time revolution of the nineteenth century, we suggest that historians have not yet adjusted their thinking to the reality of a deep past, and we consider the effects, desirable and problematic, of making such an adjustment now. In chapter 2, “Imagining the Human in Deep Time,” we attempt to reconceive the human condition as a hominin one—that is, one that includes all the species in the genus Homo that are ancestrally as well as collaterally related to Homo sapiens. The logic that makes Neanderthals and other early hominins visible to a deep history is the same logic that has made subalterns everywhere visible to modern historical praxis. We ask what new methods and intellectual habits must be developed to deal with the immense variations in time and space that form the backdrop of hominin, as opposed to strictly human, history. We develop several orientations and base metaphors that resurface throughout the book: kinship, exchange, extension, hospitality, and genealogy. These concepts have always been historical in orientation and application; they can be used to create links to the past and, quite literally, to travel through time.
In the second part of our story, "Frames for History in Deep Time," we explore three frameworks in which new and old intellectual problems can be examined. Specifically, we show how humans use bodies, environments, and languages to situate themselves in deep and shallow time. Each frame consists of social technologies that facilitate human inhabitation of and movement through space. In chapter 3, "Body," we suggest that the human form is both an objective and subjective system, a historical trace and an ongoing historical project. The body connects us viscerally to the past; it is a living medium of ancestry and relatedness. In response to the suggestion that the ancient hominin body is a natural body, unlike the culturally constructed body of modernity—a suggestion that mirrors the narrative arc of creationism—we propose two alternative claims. First, throughout its existence, the hominin body has been shaped by tools, social relations, and other elements of something we typically call "culture." Second, the epigenetic forces characteristic of the modern world sculpt the body in unintended ways. Our phenotypes, thanks to their plasticity, are continuously molded by the environments we inhabit, even if that molding is not always expressed in the genome.

In chapter 4, "Energy and Ecosystems," we pursue the idea that ecosystems shape and constrain our histories, and that human intentions cannot fully explain, and often obscure, this process. The lines we customarily draw between natural and cultural systems prevent us from understanding how these spheres constitute each other. Although we have no interest in disputing the human impact on the environment that is so profound a feature of modernity, we do contest two closely related assumptions: first, that these ecosystemic effects are unique to humanity, reflecting its mastery over nature; and second, that significant effects emerged only in recent centuries. Reframing the terms of discussion, we show how major trends in ecosystemic change are influenced by coevolutionary spirals—feedback loops and conjoint patterns of cause and effect—that can be traced deep into the Paleolithic. We return to the spiral in later chapters (notably chapter 9), employing it as a key narrative device for the writing of deep histories.

In chapter 5, "Language," we show how the discovery of genealogical relationships between human languages, past and present, has played a central role in scientific and humanistic attempts to explain deep history in the modern era. The image of the tree was central to nineteenth-century philology, and it is endlessly recycled in genetic and historical linguistic research today. Alongside this powerful frame, we explore the metaphor of the web or net. Webs direct our attention to exchange, a process crucial to the development of human languages and to recent attempts to simulate the origins of language. Because language, the body, and ecosystems are intellectual frameworks still capable of producing fascinating and organizing vast amounts of research, the three essays in this section establish the utility of deep-time perspectives for contemporary work across the human sciences.

In our third set of essays, "Shared Substance," we explore topics that have long been treated as necessary to human survival: food and kinship. These topics are of special interest to us because, as cultural systems, they create bodies, ecosystems, and languages over time. They have also left material traces—indeed, some of the oldest available to us, namely genes and isotopic data—that enable us to reconstruct events that occurred in the remote past. In chapter 6, "Food," and chapter 7, "Deep Kinship," we show how ancient forms of shared substance, and habits of sharing generally, are in fact highly adaptable processes that reveal striking transformations in what can be understood as human. Because we share our interests in eating and relating with our primate cousins, the essays in this section allow us to situate human histories within larger taxonomic contexts. We demonstrate how humans have used food and kinship to create worlds that, by comparison with other primate standards, are highly dependent on an awareness of past and present. As social projects, these shared substances are media of "kin-shipping," a tactic for moving through time and space that requires networks of relationship and exchange. We argue that because kinship allows us to communicate across distances and to reconnect after absences, it is one of our most basic tools for making history.

In our final set of essays, "Human Expansion," we deal with a complex array of problems created and solved by the rapid spread of humans into multiple physical and social environments. In chapter 8, "Migration," we chart the most literal of expansions: the movement of hominins around the globe. This process was enabled by the cultural toolkits hominins developed in response to their own mobility in and beyond Africa. Movement and innovation were interrelated. The setting of Asia, Australia, Europe, and the Americas brought the extension of social networks, changes in foodways, and adaptation to new ecosystems. These changes played out differently in different eras of hominin evolution. Among modern human populations, who colonized the Earth in less than fifty thousand years, the effects of movement varied greatly depending on whether the new terrain was empty of other humans,
whether related hominin species or other humans had to be displaced, and whether human populations were dislocated, subordinated, or reconnected within expanding social systems marked by political and economic inequality. Exploring how alternative modes of dispersal, displacement, and diaspora have affected human movement across deep time, we also show the remarkable extent to which mobility has shaped the frameworks in which deep history can be imagined.

In chapter 9, “Goods,” we study the expanding array of material objects used to connect distant populations and build complex interactive networks. Goods are made and circulated in human economies, but the goods themselves reshape their makers, triggering feedback patterns that resemble coevolutionary spirals. These spirals contain histories precisely because their effects on the human body, languages, and ecosystems leave multiple traces. Connecting these traces and arranging them in narratives is crucial to the work of deep history. Finally, in chapter 10, “Scale,” we consider the scalar leaps that have punctuated human history, including rapid population growth and the growing size and intricacy of human social formations. Like the other chapters, “Scale” is highly integrative. Showing how deep historical analysis can effectively bridge short and long chronologies, we redirect our key arguments to the task of dissecting one of the dominant metanarratives of the modern age: the belief that human development is progressive, cumulative, and directional and leads inevitably to social hierarchy and larger political institutions. This narrative of increase is itself a product of the historical trends analyzed throughout the volume, and we conclude by subjecting it to a rigorous critique—not a rejection, but a recontextualization—based on insights that arise when critique is undertaken at levels of significance and at scales that only deep historical frameworks make possible.

**METAPHORS FOR DEEP HISTORY**

This interpretive journey entails broad syntheses of major trends in the natural and human sciences. We do not, however, intend these essays to be encyclopedic. Although our team of writers includes three historians, two cultural anthropologists, a linguist, a primatologist, a geneticist, and three archaeologists, we realize that the areas of scholarship we cover in this book are vast and constantly expanding. We cannot produce full coverage; we can only inspire curiosity. We also understand that the subjects we have chosen for scrutiny are not the only or even the best domains for illustrating the promise of a deep historical perspective. Much more could be said about climate, music and art, religion, law and violence, technology, and sex. This volume does not exhaust the possibilities; it offers some and hopes to suggest more.

The principal goal of this book, then, is not to achieve encyclopedism but to propose a new array of base metaphors for the writing of deep history. Metaphors are necessary to the making of good historical arguments. They determine the shape of historical trajectories as well as the subjects and the silences of such arguments. The strategic use of new metaphors can thus lead, as Richard Dawkins and J.R. Krebs put it, to “new and productive habits of thought about old and familiar material.” The writing of deep histories requires analytical frames that do not resort to narratives of ontogeny (“the birth of the modern”), genesis (“something new under the sun”), or original sin (“stone-age brains in twenty-first-century skulls”). These are powerful metaphors, and in the hands of skilled authors, they generate exciting perspectives on the past. But the history they lead us to imagine is often flattened and foreshortened; it is a history that cannot generate sustained interest in the deep past.

We propose a different array of governing metaphors. When skillfully deployed, analytical devices such as kinship, webs, trees, fractals, spirals, extensions, and scalar integration can help us better comprehend the immensity of human time and the dynamic of connectedness that both propels and constrains change. Kinship, for instance, offers ways to connect across time and space. It surmounts the metaphor of ontogeny, which describes the life history of an organism: that story necessarily begins at the moment of conception or birth, whether the birth of a nation or of a political idea. What comes before is analytically invisible or fundamentally different. By contrast, kinship is possible only if (and only because) a formative relation preexisted and continues to define the new and particular. It has no point of origin. Likewise, the coevolutionary spiral, which envisions two genealogies entwined and feeding off each other, displaces metaphors of genesis, revolution, and the biblical Fall. Notions of the latter sort predispose us to exaggerate the singularity of historical events and to downplay the many ways in which change builds on itself. The idea of the fractal, of patterns that are replicated at every level of magnification, helps us discern how dramatic changes seem unique only if we restrict ourselves to a single level of observation. The fractal, and the imagery of ever-smaller scales it evokes, suggests that leaps are always built on other leaps. Like
ping and spiraling, fractal patterns draw us ceaselessly into the past. They explain why changes in the things we can measure, such as gross population, population density, and energy consumption, do not have to be large to be profound. If we can generate a transdisciplinary discussion of these base metaphors and the other tactics we have proposed for reconnecting short and long chronologies, then current research will fall into place within new narrative frames. The frames themselves will help generate new research endeavors.

Our agenda is critical of well-established trends in how historians and cultural anthropologists concentrate their analytical efforts in space and time. We hope this critical stance is not interpreted as a claim for the superiority—intellectual, moral, or political—of temporally deep history over the historical study of recent times. An argument of that sort would be about as compelling, and convincing, as the claim that a history of the fifteenth century is better, and more profound, than a history of the seventeenth century because it is two hundred years older. What we insist on, by contrast, is a revamped historical imagination that sees deep and shallow history as analytical contexts that can endlessly reshape each other once they are allowed to speak to each other. If historians of the seventeenth century claimed that a history of the fifteenth century was not possible, we would suspect that something was amiss. Yet statements of this kind have come between deep and shallow history for almost two centuries now. They have produced short and long chronologies, natural and social sciences, and, in the end, an unhelpful excess of mutual incomprehension. It is time to close the gap.

CHAPTER 2

Imagining the Human in Deep Time

ANDREW SHRYOCK, THOMAS R. TRAUTMANN, AND CLIVE GAMBLE

THE CHRONICLE’S MISSING YEARS

“All profound changes in consciousness,” Benedict Anderson wrote, “by their very nature, bring characteristic amnesias. Out of such oblivions, in specific historical circumstances, spring narratives.” The discovery of deep time in the nineteenth century was certainly a profound change in consciousness. It altered perceptions of the natural order and triggered an explosion of new stories purporting to explain human origins. Yet for historians, the amnesia associated with an epistemological shift of this magnitude failed to materialize. The new Darwinian worldview did not cause them to forget what they already knew about the French Revolution, the spread of Islamic civilizations, or the decline of the Roman Empire. Rather, the advent of deep time made historians realize how little they knew compared to what could potentially be known and, just as important, how much they could never know using the historiographical methods they cherished. The result was prehistory, a conceptual innovation that functioned as a protective barrier between remote antiquity and a set of scholarly techniques that was applicable only to a recent sliver of the human past.

In the modern tradition of history writing, the author blends narrative, chronology, and textual evidence to produce an account that seems full and convincing. Without dates, storylines, and documentary evidence, today’s historians cannot practice their craft; if even one of these
components is missing, the historian is confronted by debilitating gaps. He or she will try valiantly to fill them or move on to more promising terrain. Of course, this tendency says more about the mechanics of modern historiography than it does about our knowledge of the past. There are many genres of history making—among them the genealogy, the chronicle, the kings list, the heroic poem, and the monument—that include no plots, no dates, and no events at all. The historical accounts that pervade the Old and New Testaments, once the quintessence of historical truth, came to us without calendar-based chronologies attached, and the larger world, before and after biblical time, is filled with oral historical traditions that make no appeal to written evidence. These diverse ways of remembering might be of occasional use to the academic historian, who may regard them as data, but they are generally considered inadequate for creating reliable accounts of the past.

Hayden White put his finger on an essential aspect of modern historiography when he noted how strange the habits of medieval chroniclers appear to us now. The annalists, usually clerics, kept lists of years to which they affixed important events, but they left certain years empty, as if to say, “Nothing of importance happened in 734.” The entry of a year into the chronicle without a single memorable event associated with it strikes the modern sensibility as odd, as unfinished work—as if the passage of years were the important part, not the happenings and trends that are measured in years. Of course, to the eighth- or ninth-century chronicler, the passage of years was indeed very important, as it brought humanity ever closer to Christ’s promised return. What to the modern eye looks like an empty spot that necessarily contained something to the chronicler must have looked like an uninteresting step, dutifully recorded, in the collective, unstoppable march toward the end of time.

It is ironic that modern historians should look askance at the annalist’s little gaps, given the immense holes in time we have opened up, and left unfilled, over the past two centuries. Whatever we might say about the Bible as a historical document, we can agree that it attempted to tell the whole story, from Creation to Last Judgment. This universal framework explains why Archbishop James Ussher, one of the most distinguished members of a long lineage of chronologers, thought it a worthwhile endeavor to apply calendar dates to the Book of Genesis, dating creation to 4004 BC and thereby making it the consummately historical event it had to be; it also explains why the time revolution of the nineteenth century ended the Bible’s long reign as a literal account of human history. The discovery of deep time, as Benedict Anderson deftly put it, “drove a wedge between history and cosmology.” In the world of history writing, prehistory became the equivalent of the medieval chronicler’s empty year. But the empty space called prehistory was immeasurably large, and the modern historiographer’s inability to fill it created analytical challenges that were moral (that is, cosmological) as well as technical. To the extent that humans still believe that history is about us and that our history, like the biblical one, should go back to the beginning, the discovery of deep time requires us to imagine human nature in new ways.

This change in orientation began very suddenly and is still unfolding. At the beginning of the nineteenth century, the educated classes of Europe believed the biblical story of creation to be a true historical account. By the beginning of the twentieth century, this belief system was disintegrating, and new stories of human origins were replacing it. The growing certainty that our planet and our species were here long before the date promulgated by Archbishop Ussher meant that these new stories had to be constructed on a massive time scale. Evidence that humans had evolved from prior forms—thought, in the Victorian age of progress, to be more primitive forms—meant that a greater range of physical variation had to be worked into the story of our species. A new sense of distance and differentiation was needed to provide architecture for knowledge of the remote past.

Once again, there is the semblance of a gap, of missing years. But was this opening up of space and time as revolutionary as it now seems to be? Could we perhaps understand it better, and historicize it more creatively, if we treated it as a situation we have encountered many times before? Covering vast spatial and temporal distances and making human variations part of our social lives are practical (and conceptual) activities at which humans excel. The time revolution is a very recent event, and its effects on the way we imagine the human are best appreciated if we place it first in contexts that are historically particular—where dates, narratives, and texts matter a great deal—and then in contexts that are more general, in which a different array of historiographical devices enable us to reconnect to a larger human past.

**Bell, Book, and Biface**

England in 1859 was a banner year for time, and in particular deep time. Just over 150 years ago—equivalent to about seven generations for an anthropologist, a long century for a historian, and an acceptable
error range in a radiocarbon date for an archaeologist—the passage of one year was marked by the events surrounding three artifacts: bell, book, and biface (a stone tool whose surface is worked on both sides). To make sense of them required an imaginary geography, a step into the dark of human prehistory.

The biface led the way. On April 27 the geologist Joseph Prestwich and the antiquarian John Evans stood in a gravel pit outside Amiens in the Somme Valley of France, watching a photographer, and his very large camera, record what they had come to find: undisputable evidence of a stone tool found in the same geological stratum as extinct animals. Such a find had been anticipated but elusive. The discoveries by the Frenchman Jacques Boucher de Perthes lacked scientific supporters, whereas an earlier discovery in 1797 by a Suffolk landowner, John Freer, had been noted but forgotten. Freer’s stone artifacts from Hoxne were rediscovered on Evans’s return to London, when he chanced on them in a display case at the Society of Antiquaries. They were Acheulean hand axes, a tool tradition that originated in the Lower Paleolithic among *Homo erectus* and survived, in roughly the same form, for more than a million years (figure 2).

Once these artifacts were accepted as human creations, they allowed Prestwich and Evans to build a reasoned, evidence-based case for the long-debated existence of pre-Adamite humans. They also created a deep time that was not anchored in chronology, because they never even speculated on how many years separated the bifaces from the present. Freer’s letter famously attributes them “to a very remote period indeed; even beyond that of the present world.” However, Prestwich thought that rather than distancing the past, their discovery could place extinct animals and humans closer to the present. Charles Lyell referred to their discovery as representing “a vast lapse of ages,” older than the Romans and Celts by a considerable degree and thus outside history. Six years later, Sir John Lubbock, a close friend of Evans and a neighbor since boyhood of Charles Darwin at Down House, placed the Amiens biface in a Paleolithic period that, together with the later Neolithic, he labeled the “Stone Age” in his *Pre-historic Times*.

Then came the bell. The Palace of Westminster had been destroyed by fire in 1834. Rebuilding was slow and over budget. Indeed, the principal designer, Augustus Pugin, died in 1852, long before the completion of the imposing clock tower, best known by the name of its great bell, Big Ben. The tower was officially opened on September 7, 1859, and its architect, Sir Charles Barry, outlived it by only a year. Ever since (more or less), this sonorous monument of public time has struck out the hour, on the hour, at five-second intervals, like the heartbeat of the nation. Big Ben was one in a succession of public timepieces installed since the seventeenth century to establish a new urban temporality. The point of Big Ben, and all his smaller brothers, was that citizens no longer had to seek very hard to know the time; it now reigned over them.

Big Ben epitomizes a concern for chronological accuracy and the proper division of time (with chimes sounding every quarter of the hour). The same concerns dominated the next century of Paleolithic research. Chronology provided a narrative focus for archaeologists by encouraging them to construct ever more accurate timelines. However, their pursuit of time contributed little to a history of the period. It yielded not a deep public sense of time but rather a succession of dates, associated with different types of stone tools.

Big Ben suggests another origin point, however, more in keeping with the public imagination of past and present. Barry and Pugin cloaked their timepiece in the style of Gothic revival. Pugin’s designs for the
Palace of Westminster reflect the contemporary obsession with chivalry and the medieval. Time, like the houses of Parliament, was wrapped in a manufactured past. As history became an integral part of government, timekeeping became a national project in service to a sense of heritage and collective memory for which the state was responsible. Under these conditions, the telling of time had to be marked culturally by embedding it in the past.

And finally we come to the book: Charles Darwin’s long-awaited *On the Origin of Species by Means of Natural Selection*, published on November 24, 1859. Darwin provided a mechanism to account for evolutionary change, and he argued that the tempo of this change was gradual, requiring the passage of vast amounts of time. When combined with Evans and Prestwich’s biface discovery earlier in the year, Darwin’s model resulted in a new sense of history, one in which the human role in the universe was no longer seen as essential and permanent. According to biblical and classical sources, a universe of this kind was not possible. A literal reading of Genesis allowed only five days in the entire history of the universe that were devoid of human life; and in the Aristotelian tradition, humans had always been present. It was, as Martin Rudwick emphasizes, the presence of humans that gave meaning to time and created a world with history. But Evans, Prestwich, and Darwin opened up a cosmos in which humans appeared very late, leaving vast stretches of time without people and, therefore, without meaning or history in either the biblical or Aristotelian sense. They were by no means the first to think in these terms, but by transferring the burden of proof away from ancient texts and onto objects, they achieved a convincing demonstration of the sheer “otherness” of the deep past. Previously, this quality had applied only to fossils; now it applied to humans as well.

**PREHISTORIC TIME(S), AND WHEN HISTORY BEGAN**

These three events in 1859 point up several issues concerning history and deep time. In the first place, the representation of time we take from Evans and Prestwich is rather different from that found in Darwin’s account of the mutability of species. The dominant image from the Amiens pit, nicely captured in their photograph and section drawings, is of a time neither linear nor cyclical but vertical and layered. It must be dug into rather than traced with a finger or walked as a timeline. Deep time presents itself as sequentially compressed slabs composed of different materials, both organic and inorganic; it is compacted, oppressively heavy, and impenetrable; it is hidden from public view. Prestwich, Evans, and the geologists and archaeologists who followed them were cast as expert time foragers; they imagined the deep past (as it was prior to compression) before they encountered it (as deposits and remains).

A second point builds on this necessary imaginative exercise. Because deep time could not be measured in 1859, some nontemporal device was needed in order to explore it and classify its inhabitants. One successful strategy was to equate remote times with remote places—with the uttermost ends of the Earth. This device, which substituted distance for time, was already well-used in pre-Adamite investigations. An oft-cited example is Joseph-Marie Degérando’s memorandum to the Pacific explorer Nicolas Baudin before he set sail from France for the South Pacific, never to return. “We shall in a way be taken back to the first periods of our own history; we shall be able to set up secure experiments on the origin and generation of ideas, on the formation and development of language, and on the relations between these two processes. The philosophical traveller, sailing to the ends of the earth, is in fact travelling in time; he is exploring the past; every step he makes is the passage of an age. Those unknown islands that he reaches are for him the cradle of human society.”

The simple equation of geographic distance from Paris with temporal distance from the human present drew on a prior conception of who stood within world history and who did not. The asymmetry of the historical process was indicated in material and cultural ways and in the act of discovery itself. The French explorers did not need to mention the absence of written records. Peoples were also assigned to deep time on the basis of linguistic connections mapped out by philologists: their comparative methods produced genealogies of languages and nations, suggesting that peoples once thought to be separate and racially distinct actually shared ancestors in the distant past. These equations, spatial and linguistic, were still drawn in relation to classical and biblical worlds. They were not designed to accommodate flint tools found in proximity to extinct animals; nor could they immediately define or encompass the vastness of time out of which these simple objects were extracted.

The vertical, impenetrable character of deep time, in which tools were the key proxy, postdates the age of exploration, when anchors were dropped by the sandy shores of a remote human history. It is therefore possible to identify two communities concerned with establishing deep time: one that encountered it at the uttermost ends of the Earth, and
one that imagined its historical possibility in the uncovered depths of the Earth. Darwin belonged to both communities. During his visit to the Beagle Channel in Tierra del Fuego, he famously noted: “The astonishment which I felt on first seeing a party of Fuegians on a wild and broken shore will never be forgotten by me, for the reflection at once rushed into my mind—that were our ancestors. He who has seen a savage in his native land will not feel much shame, if forced to acknowledge that the blood of some more humble creature flows in his veins.”

Like so many others, Degéando and Darwin filled deep time with the prime figures that Eric Wolf would later call “the people without history.” For these “more humble creatures,” history began as a result of their encounter with Europeans. It was conferred on them, like the name “Jimmy Button” that was given to the Fuegian returnee aboard the Beagle. It was not imagined, like the deep time in the gravel pit at Amiens (about which Darwin formed a favorable opinion under Lubbock’s guidance, having previously dismissed Boucher de Perthes’s claims for stratified stone tools as “rubbish”). Hence, as a member of both the community that encountered deep time directly in its supposedly primitive human form and the community that had to imagine and reconstruct it as a remote era in which modern humans were absent, Darwin was able to reject forcefully the notion of historical degeneration. “To believe that man was aboriginally civilised and then suffered utter degradation in so many regions, is to take a pitifully low view of human nature. It is apparently a truer and more cheerful view that progress has been much more general than retrogression; that man has risen, though by slow and interrupted steps, from a lowly condition to the highest standard as yet attained by him in knowledge, morals and religion.”

The issue of prehistoric time returns us to Big Ben. The time revolution of the nineteenth century enfolded the monuments and materials of the past into a political narrative. Self-determination, nationhood, and good government needed a well-imagined past to create a palpable sense of common history, and the allure of genuinely old histories for demonstrably new nation-states was all but irresistible. This trend is exemplified in the call to arms by Jens Worsaae in 1849, during the formation of the Danish state (an important site in the development of prehistoric archaeology):

The remains of antiquity thus bind us more firmly to our native lands; hills and vales, fields and meadows, become connected with us, in a more intimate degree; for by the barrows [burial mounds], which rise on their surface, and

the antiquities, which they have preserved for centuries in their bosom, they constantly recall to our recollection, that our forefathers lived in this country, from time immemorial, a free and independent people, and so call on us to defend our territories with energy, that no foreigner may ever rule over that soil, which contains the bones of our ancestors, and with which our most sacred and reverential recollections are associated.

Prehistoric monuments were less important for national identity in Britain, although they have shaped the practice of regional history, and the emergence of the Stonehenge brand has satisfied other demands on the past. The architecture and design of Big Ben remind us of the variety of geographical readings involved in any understanding of what constitutes deep time. But just how different are Worsaae’s claims on the past from those made in July 2004 by Gordon Brown, then chancellor of the exchequer, in his much-reported speech on Britishness? “Out of [the] tidal flows of British history—2,000 years of successive waves of invasion, immigration, assimilation and trading partnerships that have created a uniquely rich and diverse culture—certain forces emerge again and again which make up a characteristically British set of values and qualities which, taken together, mean that there is indeed a strong and vibrant Britishness that underpins Britain” (Guardian, July 8, 2004).

Although this could be interpreted as a similar plea for nationalism, Brown’s target is wider: how can national identity be turned to advantage in a global economy? But most informative is his choice of timescale for a distinctive British history. Rather than looking back as far as Stonehenge (4,000 years) or the Hoxne hand axes (400,000 years), he settles, rather predictably, on a history traced no further than the arrival in Britain of the Romans. The temporal scale of statecraft and empire (the natural preserve of clerics, court historians, and official historians—in short, the realm of the book) trumps that of hand axes and standing stones any day. If the Danes had possessed only the contents of their burial mounds as evidence for their national history, they would suddenly have found themselves at the ends of the Earth, in the company of Darwin’s Fuegians.

OBJECTS AS AGENTS IN TIME

“Archaeology,” wrote Lubbock, “forms the link between geology and history.” The fossilized bones of animals and the works of humans provide clues about how they lived. So much is well understood. Yet Lubbock never explained what he meant by history, except that it had to
be written down. He compounded the problem by coining, along with David Wilson, the word prehistory, which appears in the title of his magnum opus, Prehistoric Times, as Illustrated by Ancient Remains, and the Manners and Customs of Modern Savages. His opening assessment of this period, “Our prehistoric antiquities have been valued as monuments of ancient skill and perseverance, not as pages of ancient history,” seems unchanged by the end of his 640-page treatise.24

The challenge to bring deep time into the writing of history remains. Attempts to emphasize the materiality of deep time that began in the nineteenth century have not been overtly successful. The three technological ages—Stone, Bronze, and Iron—and the many global, national, and local subdivisions of material types have left earliest prehistory dehumanized, a place merely to plant an origin myth for the modern world.25 Indeed, most archaeologists working in deep time have imagined a past that accentuates the Evans-Prestwich-Darwin model. In this view, not only did hominins appear late in the story of the evolution of life, but humans appeared late in the story of hominins.26

There are, however, signs of an alternative perspective emerging. Bi- face, book, and bell are not simply markers of time or metaphors that capture certain ways of thinking about time: they are objects actively engaged in its production—not in the way Big Ben sounds out the hour, perhaps, but through the agency of material things, such as the biface that Evans and Prestwich found in April 1859. If objects have no agency, then these men would not have been visiting a gravel pit, and we would not be scratching our heads about deep time and history. That simple biface was both the source of and the target for human agency because it stood in a network of social relationships.27 The small community of inquiry created in the spring of 1859 was composed of materials, things, and flesh-and-blood people. It made novel connections between places as varied as muddy gravel pits and the metropolitan meeting rooms of learned societies.28 The biface, and the networks of relationship that emanated from it, certainly affected the lives of its discoverers and all those who have subsequently come into contact with it.

Hominins have always been constituted by the agency of persons and things. Our history is a material history, not just a succession of thoughts or speech acts. If deep time is to figure in our histories, then we need narratives that can triangulate between agents and materials. This shift in focus brings into play a model of cognition that differs from the one that underpinned the deep-time revolution of 1859, which stressed a rational appreciation of the evidence rather than a relational understanding. A mind distributed in social relationships and physical materials takes cognition outside of the head, beyond skin, and into the world.29 Such externalism means that materials and artifacts are always implicated in our cognitive architecture rather than being simply the outputs of internal cognitive processes. Thinking through objects rather than thinking about objects becomes the description of cognitive processes.30

**KINSHIP**

If we think about a biface, we are already locating it, and ourselves, in time. We know the Amiens biface came from a remote place. Not only had it been underground for a very long time, but the Victorians could only assume that the people who made it were of a kind distant from and inferior to themselves. Prestwich and Evans sat atop an imperial world filled with primitives, colonials, stagnant civilizations, and subject races. The idea that similar hierarchies sank down into the Earth and could be dug up was not hard to entertain. The biface, set within the evolutionary frames developing in the nineteenth century, confirmed and constituted a social relationship. The absent party to this relationship, the maker of the biface, had to be imagined. It was easy to do. As Martin Jones has argued, Victorians would have pictured any stone-tool maker as a savage, consigning him to a world populated by “Plains Indians and Inuit Eskimo in all but name”; for us, Hollywood movies and more than a century of paleoanthropology provide stock mental images.31 But we always imagine someone who would act and interact in a certain way, and the biface is crucial to this construct. If Evans and Prestwich had found a scroll in their exposed strata, we would be compelled to imagine another kind of human and another kind of human history.

Kinship is central to these imaginative acts. The maker of the Amiens biface was long ago assimilated into the category of “ancestor,” which means we are somehow part of the same “family.” Over the past 150 years, we have had trouble extending our nations, languages, and civilizational complexes into deep time; there is nothing to persuade us that there is anything prehistoric about any of them. The idea of human kinship, by contrast, travels well through time. We no longer find it difficult, or even problematic, to assume that we are related to the human (and prehuman) occupants of deep time, that we “descend” from them and share physical substance with them. If the time revolution created
remote areas in the human past, *kinship* (moving through time and space by means of relationship and exchange) has proved an effective way of exploring these areas and reconnecting with them.

The perception of kinship, wherever we find it among humans, is based on ideas of similarity, mutual obligation, and sharing. Yet kinship plays on difference as well. Some people are closer to us than others, and kinship can wear thin over time. The opening up of deep history has reproduced, in novel forms, many of the challenges to kinship that have long been associated with distant epochs and regions. The book of Genesis tells us that, in the early generations of human history, there were “giants in the earth,” the Nephilim, offspring of the “sons of God” and the “daughters of men.” The ancient Greeks populated the edges of their world with monstrous creatures that were somehow related to humans. European explorers, during their initial journeys to the Americas, fully expected to encounter the one-footed, dog-headed, and flesh-eating races posited in classical geography. Instead they found people like themselves, but different enough to prompt debate. Were these people descendants of Adam? Did they have souls worth saving? The answer was yes, but it came only after years of disagreement, and a papal decree was needed to settle the matter decisively.

Today, the idea that all humans belong to a single species is taken for granted, and kinship is still used to mark the outer boundaries of humankind. Our nearest primate relatives, the chimpanzees, have emotions and behaviors we immediately recognize, and 98 percent of the human and chimp genomes are the same. The remaining variations have accumulated over roughly 6 million years, and paleoanthropologists examine them following highly nuanced kinship agendas, parsing fine distinctions among several species of australopiths and several varieties of *Homo*, including our close cousins, the Neanderthals. The kinship done within this 2 percent margin of difference draws on a peculiar blend of hypermodern science and representational tools that are decidedly premodern in origin.

The most indispensable of these tools is the family tree. This is a genealogical construct, and a deeply historical one. Although academic historians today consider genealogy (or family history) a rather plebeian form of historical research, there was a time not so long ago when history and genealogy were inseparable genres. Modern historiography is defined by the loosening of genealogy’s grip on written accounts of the past, which once fixated on topics that were best treated in the language of pedigrees. Hereditary dynasts, the nobility, clerical elites, and received scriptural traditions all derived their historical authority in large part from pedigrees. Ironically, the rise of genomic research is based on its literal, unapologetic interest in the sort of authenticating genealogy that secured kings on their thrones and nowadays draws millions of ordinary people to public libraries or genealogy websites in search of their ances-

![Image](https://example.com/image.jpg)

**Figure 3.** The mitochondrial Eve. Early research on mitochondrial DNA in humans, which is transmitted through the female line, produced a wealth of tree and genealogical diagrams. This one, which appears in *The Great Human Diasporas* by Luigi Cavalli-Sforza and Francesco Cavalli-Sforza, represents the findings of Rebecca Cann, Mark Stoneking, and Allan Wilson, who discovered the mitochondrial Eve in 1987. Starting with our female ancestor in Africa (bottom right-hand corner), the tree illustrates one line of descent that produced seven branches in Africa and a second line of descent, curving around to the left, from which sprang myriad branches and twigs in New Guinea, Australia, Asia, and Europe. Because it has been curved to conform to the geographical distribution of the descendants, the family tree depicted here does not have the usual shape of genealogical trees. (Cavalli-Sforza and Cavalli-Sforza 1994, 66; used by permission of Perseus Books Group.)
tors. Faced with traversing the great temporal and spatial distances that have opened up in human history since the nineteenth century, modern bioscience is returning to an old and sturdy way of imagining human community.

Today genomic kinship takes the form of lineal genealogy, and there is a distinctly biblical resonance to the family trees that molecular anthropologists are piecing together. Genomic maps enable us to calibrate the nearness of all humans to each other, to our hominin ancestors, and to nonhuman species. The explosion of new genetic research has yielded an expanding universe of deep histories built around family trees in the form of cladistic diagrams and tracings of human migration, beginning in Africa (the new Eden) and fanning out across Asia, Europe, and then North and South America (see chapter 8). The models are impeccably scientific, yet Adam (with his Y chromosome) and Eve (with her mitochondrial DNA) still figure as ancestral mascots for our kind. They have been crucial to the popularization of genomic research, whose first great discovery was the African Eve, mother of us all (see figure 3).

**PRUNING THE FAMILY TREE**

Genealogy is not kinship as we ordinarily experience it. If it were, we would not need to spend hours in archives researching it; nor would there be, even in societies without writing, people who specialize in remembering and transmitting it. Genealogy’s reputation as expert knowledge has been won, oddly enough, by means of simplification, by the cutting away of certain relations from the thicket of kinship and the scrupulous tending of others. The branches of genealogy extend forward in time and are forever expanding. In early Jewish, Christian, and Muslim societies, descent was traced through male links, and the sacred texts of the Abrahamic tradition are replete with lists of men begetting and begotten. In medieval European manuscripts that represent the genealogy of the Messiah as described in the prophecy of Isaiah, the genealogy takes the form of a tree that springs from the recumbent and dreaming figure of the patriarch Jesse (figure 4).

Though less common, the tracing of descent through female links is found in a diverse range of African, Asian, and Amerindian societies. It is possible to trace descent through males and females simultaneously, or to trace it back and forth across gender lines; many human societies, including all those in which English is spoken, have kinship systems...
that are bilateral and do not produce lineages of kin related exclusively through paternal or maternal lines. In short, there is immense variation in the way humans keep track of their kin. The tight link between genomic research and one very particular way of tracing descent, the unilinear genealogy, is a fascinating pattern that needs explanation.

Charles Darwin lived in a pre-genomic society, but the genealogical tree was central to the deep history he made possible. The Origin of Species argued that descent reveals the hidden logic of Linnaean classifications of plants and animals, and that similarities in form are explainable as the outcome of genealogical proximity. In his chapter on classification, Darwin used genealogical lines to connect scattered points of the necessarily incomplete fossil record, bridging the gaps between related species. Genealogy, in other words, brought the Linnaean species of the present into relation as codescendants of ancient species known through the fossil record. The genealogical diagram was perfectly suited to the task of synthesizing the record of deep history with the record of the present.

Since Darwin set deep history on its present course, genealogical diagramming (alongside advances in genetic analysis) has only grown in importance, partly because of a fortuitous coincidence. Current genomic research follows the unilinear pathways of the Y chromosome (which is patrilinear) and mitochondrial DNA (which is matrilinear) for tracing branching lines of descent. Genealogical diagrams are ideally suited to represent these pathways. Like the genealogical tree itself, the analysis of change in the human genome over time isolates lineal relations from other relations of descent and marriage. Our strong fondness for genealogical trees cannot, however, be fully explained by biogeography; it predated the knowledge of genes and has figured prominently in bodies of scholarship distinct from the biological sciences.

One field in which genealogical or cladistic diagramming reigned supreme was historical linguistics (see chapter 5). Darwin himself recognized the similarity of language trees to his own “branching diagram” in the matter of biological classification:

It may be worth while to illustrate this view of [biological] classification, by taking the case of languages. If we possessed a perfect pedigree of mankind, a genealogical arrangement of the races of man would afford the best classification of the various languages now spoken throughout the world; and if all extinct languages, and all intermediate and slowly changing dialects, had to be included, such an arrangement would, I think, be the only possible one. Yet it might be that some very ancient language had altered little, and had given rise to few new languages, whilst others (owing to the spreading and subsequent isolation and states of civilization of the several races, descended from a common race) had altered much, and had given rise to many new languages and dialects. The various degrees of difference in the languages from the same stock, would have to be expressed by groups subordinate to groups; but the proper or even only possible arrangement would still be genealogical; and this would be strictly natural, as it would connect together all languages, extinct and modern, by the closest affinities, and would give the filiation and origin of each tongue.34

Historical linguistics creates genealogical trees of relationship among languages by first removing all signs of borrowing. This paring away of borrowed material is analogous to the formation of unilinear genealogies through the paring away of marriages and kinship relations conveyed through both genders. The cladistic diagrams that result are in both cases partial and reductive. Narratives of mixture are not possible in these terms and must be fashioned through analysis of a different kind. Nevertheless, the ability of historical linguistics to discern kinship across great distances revolutionized deep history in the late eighteenth century in ways that were profoundly resonant with the deep history that Darwin built.

Given the obvious importance of cladistic diagrams to the deep histories emerging from eighteenth-century linguistics and nineteenth-century biology, where did they come from? If Darwin had the example of historical linguistics before him, where did the linguists get it? The answer is surprising. The patrilinear trees connected with deep history prior to the emergence of historical linguistics and Darwinian biology were drawn from the Bible, from the book of Genesis. Following the flood of Noah, the Earth was repopulated by Noah and his three sons Shem, Ham, and Japheth, and their wives, begetting more sons and sons of sons. These descendants formed a tree of nations, or rather of patriarchs who fathered the nations, such as Javan, father of the Greeks, and Heber, father of the Hebrews. For centuries, this patrilinear tree of nations was the master image of deep history for the “peoples of the book,” Jewish, Christian, and Muslim. The tree itself was extended by the addition of new patriarchs. According to Muslim accounts of India’s history, for example, Hind, son of Ham, son of Noah, was the father of the Indian peoples. Turks also had to be fitted into Noah’s progeny, as did the Chinese.

The outcomes of this project are the many universal histories of the past. One of the first printed books of Europe is the Nuremberg Chronicle of Hartmann Schedel, a magnificent compendium showing the whole
of world history from Adam and Eve to the present, and the future to the second coming of Christ, represented as a great “week” of seven thousand years. The sons of Noah are connected to the kings of Europe by twisty vines, prototypes of the cladistic diagrams of today’s genetics. First published in 1493, this tidy narrative was about to be greatly strained by Columbus’s discoveries. Its chronology of seven millennia would prove to be a relatively shallow foundation for deep history; but its basic genealogical structure has been preserved, albeit unwittingly. What molecular geneticist today would claim to labor in the tradition of Genesis, or of Hartmann Schedel?

The biblical source of the modern tree of languages is not widely acknowledged, but this point of origin is, when one ponders it, highly fitting. The comparative linguists and Darwin were pioneering a new history of the world, a new Genesis narrative. In doing so, they breathed new life into a kinship structure that has helped make our world intelligible, perpetuating its logic in self-consciously scientific forms. It is a stunning instance of the human capacity to use kinship to discover (and create) relations over great distances of time and space. This power must have been important to our distant ancestors as well. What were their kinship maps of deep space-time like? We have good reason to believe that long genealogies and large, cohesive descent groups were not common among humans before the domestication of plants and animals, when economic surpluses and sedentary living turned kinship into a means of limiting access to resources via categories of relatedness. If unilinear genealogy established its dominance late in the human story, what were the kinship tools people used to speed their geographical expansion within and beyond Africa, tens of thousands of years before agriculture? Might these structures be useful to us in thinking about deep history?

CROSSNESS AND CONNECTION

Every person is the center of a web of kinship formed by marriage and descent through persons of both genders: a personal kindred of immediate kin and secondary, more distant kin. These relations form kinds, with names like father, mother, brother, sister, cousin, and so forth. These terms are patterned by a logic we learn to apply as children: if Sarah is the mother of Jim, then Jim is the son of Sarah. These personal kindreds, made up of individuals sorted into kinship categories, form the experiential world of kinship. Unilinear structures such as lineage and clans are formed by giving special privilege to relationships defined by links to ancestral males (patrilineal) or ancestral females (matrilineal). The more basic agenda of human kinship, however, is not about modeling pedigrees but about creating new kin (offspring) and new kinship relations with people who are not kin, or with people who are related to us as kin of a specific kind: namely, the kind we can marry.

Like other primates, humans generally avoid mating with their offspring, parents, and siblings. Anthropologists were once fascinated by incest taboos, which are found in all human societies, and this fascination predated accurate knowledge of mating patterns among other primate species. When Claude Lévi-Strauss argued that the incest taboo is what makes humans human, he did not know that incest avoidance is also characteristic of other primates. If we are to locate kinship structures as deep as the deepest human histories, then we should look for them not in universal genealogies, nor in the fact that we abhor incest, but in the marital strategies and mating practices that produce living arrangements unique to human societies.

For Lévi-Strauss, the most elementary structure of human kinship was the relationship between “a maternal uncle, his sister, and his nephew.” This “atom of kinship” has recently been tweaked by Bernard Chapais, who argues, in language slightly less sexist, that all human kinship systems are based on a relationship between “a sister (and daughter) linking her brother (and father) to her husband.” In both cases, incest avoidance between siblings, parents, and children requires the incorporation of outsiders who create new atoms of kinship. This incorporation is achieved through the exchange of persons and objects, and it results in the forging of kinship networks across genders, generations, and, most distinctively, space. Compared to chimps and gorillas (see chapter 7), humans have extensive regional networks of kin relations, and we build these networks by making difference (and distance) essential to the creation of sameness, of kinship itself. Among contemporary hominids, humans are the only species that maintains active kinship ties between individuals who live in separate breeding groups. We are also the only primate species in which offspring have active kin ties to their mother’s male siblings.

This very human way of creating kin is based on the fundamental appeal of crossness and connection. Crossness, explained in chapter 7, is a way of arranging kin such that everyone is sorted into a checkerboard of equal and opposite classes of same (or parallel) and other (or cross).
Without resort to lengthy genealogies, these relations can be extended laterally by a recursive logic according to which the parallel kin of my cross kin are my cross kin, and the parallel kin of my parallel kin are my parallel kin. Given this pattern, a few basic questions can establish the mutual social locations of two people when they first meet. Irving Hallowell found that among Ojibwa people in Canada, opposite-sex siblings were expected to observe relations of respect and distance (it was improper for a brother and sister to be alone together in the same canoe or the same dwelling, for example). He also found that parallel cousins—that is, mother’s sister’s children, or father’s brother’s children—were considered siblings and treated with similar reserve. But cross cousins—mother’s brother’s children, or father’s sister’s children—were not classed as siblings; they were marriageable, and they were subjected to all kinds of sexual teasing. When Hallowell and Chief Berens canoed upcountry several hundred miles, it took but a few minutes to determine that Berens was for a cross relation to people they met and for the suggestive joking to begin between Chief Berens and an old married woman, to general hilarity. The ability to assign people to parallel and cross categories ensures that kin, no matter how distant, are never lost through remoteness of the relation. Indeed, remoteness becomes yet another tool for the creation of familiar ties.

Humans have developed many forms of kinship that play with notions of crossness and connection. Among the Garo of Meghalaya in India, people of Marak lineages marry people of Sangma lineages and vice versa: every married couple has behind it segments of these two large matrilineral categories. Many Australian peoples have kinship systems that combine the crossness of kin, the duality of gender, and the alternation of generations (my generation versus those of my parents and children) to form marriage classes of four or eight categories. Fathers in marriage class A and mothers in class B have children belonging to C, who marry people of D, and so on. The structural similarity of marriage classes, and the fact that class names often extend across vast territories, makes it possible to find or create relations between strangers. People do this by asking a series of routine questions about names, language, genealogy, and locality. Aram Yengoyan, an ethnographer who has worked among Pirjandjara aboriginal groups, reports that after a journey of several weeks with him by truck, Australians meeting strangers of other tribes and languages immediately established relations through marriage sections.

However complex these systems might seem to us, they are rooted in basic dichotomies between male and female, sibling and nonsibling, parent and child. In societies that do not distinguish cross and parallel kin, a set of close relatives (parents, siblings, children) is differentiated from those who are more distant (aunts and uncles, cousins, nieces and nephews), and the kin terms used to describe relatives on the mother’s side are the same as those used for relatives on the father’s side. In these bilateral systems, found among Inuit whale hunters and European capitalists alike, concepts of near and far shape marriage rules, and the closest kin are, by definition, those a person cannot marry. The experts are divided over whether cross or bilateral kinship developed first. Each system is demonstrably ancient, and the fact that both remain common today is a testament to the durability of human kinshipping traditions. It also suggests that kinshipping is a viable way of imagining community in deep time.

The DNA trails that connect us to our most ancient ancestors are a compelling way of pursuing this work of the imagination. But as we look to the future of studying the past, much older forms of kinship might help us reconvene ourselves with our remote kin. We conclude this chapter by imagining ourselves in relation to people we have never met but know to be, at least potentially, our kin. Putting this knowledge to work requires not only that we think about kinship in the abstract, as a set of ideas and practices, but also that we actively engage in it by using objects (like the biface) and tactics (like the visit and the exchange) to create relationships across a gap. Humans are very good at this game, which we have always been willing to play with our dead kin, spirits, animals, material artifacts, and forces of nature. The intellectual experiment that follows, in other words, has a deep history of its own.

**VISITING DISTANT KIN**

We began with the idea that modern historians turn away from gaps, from problems and periods for which there are no dates, no archives, and no verifiable stories to tell. Perhaps we should continue now by inverting this idea. Modern historiography in fact depends on gaps, distances, and empty spaces. When these intervals do not exist, historians create them, thus making it possible to write infinitely many books on Elizabethan military technology, or taxation in the Xing dynasty, each one insisting that something essential has been left out of all previous accounts. R.G. Collingwood thought he was stating the obvious when he argued that thought is historical only if it involves the imagination.
of events and people who are absent, or "res gestae: actions of human beings that have been done in the past." The challenge is to work around absence by means of "documents." For Collingwood, documents are residual evidence from an earlier time—not just written materials, but stone tools, skeletal remains, and burned seeds plucked from ancient hearths. An object becomes a document when we use it to figure out what the absent people who created it were doing. Asking new questions about what people did in the past, it follows, creates new gaps in the historical record, and new documents are needed to fill them.

If we take this model of history seriously—which means, first of all, not confusing it with what academics call history—it becomes possible to think of human kinship itself as a form of historical thought, perhaps the oldest and most effective we possess. Kinship links us to absent people, past and present; it enables us to figure out who they were and how they interacted; and it allows us to arrive at these conclusions properly only if we think through objects, which must be (or have been) aligned and exchanged in ways that allow us to conclude that certain people are truly “related.” The objects of kinship include bodily substances, names, shared foods, physical resemblances, stereotyped behaviors, and the materials, feelings, and ideas connected to these “documents.”

Human kinship is like history because it is knowable only in relation to absent parties. Humans are unique among primates for keeping up relations—interacting and visiting—with kin who no longer live with us on a daily basis. In a sense, kinship terminologies help us construct miniature historical accounts of these absent individuals, and these family histories help us remember each other and interact on familiar terms when we are reunited or meet for the first time. The benefits (and costs) of this linking behavior are distributed across several human life spans. Indeed, the most remarkable attribute of human kinship is not simply its “release from proximity,” a byproduct of language that is found in several varieties of human thought; nor is it simply the development of what Clive Gamble describes as “concepts that related people when they were apart,” which must originally have been very simple.44 Rather, it is the seamless articulation of the living with the long-dead and the not-yet-born that gives human kinship its greatest connective and systematizing power. This latter capacity might be recent—Gamble, for instance, argues that it facilitated the global human diaspora that began roughly sixty thousand years ago—but it is now as much a part of the human package as bipedalism or pair bonding.43

Given the weight and antiquity of kinship systems, it is not hard to understand why nation-states are likened to families (and have founding fathers); why citizenship is described as fraternitas; or why the time revolution of the nineteenth century, a moment of triumph for modernity and science, should have resulted, a century and a half later, in genomic research that tells us how we are all related, where our ancestors came from, and how and why we are different from each other. In short, we have become good at using different tools to provide the same kind of information that people used to find by opening their Bibles, and much of deep history is shaped by Abrahamic cosmology. What would happen if, in pursuit of a less recognizable deep history, we not only drew on the genealogical imagination that underlies Darwinian (and biblical) models of descent but tried as well to put the lateral affinities of Ojibwa- and Pitjandjara-style kinship to historiographic use?

EXTENSION AND COMPRESSION

When Chief Berens meets other Ojibwa for the first time and quickly ascertains that they are cross kin, this conclusion depends on articulation with, and through, abstract categories. It depends on the ability to separate kin relations from the realm of discrete individuals, to treat these relations as rules, and to apply them to strangers. There is always a gap between kinship systems and the real, living people they describe. The potential to be cross or parallel exists independently of the fact that Chief Berens is one or the other. If a set of clan names is arranged in terms of cross and parallel relations, they can be used to sort out thousands of people across a large geographical region. This process of lateral extension is ingenious for its ability to work forward and backward in time; it expands in order to collapse. Once Chief Berens is defined as a cross relative, he can be treated in a familiar way, like other cross cousins local to the village he was visiting.

The idea that kinship was designed to support individuals who travel is rooted in its capacity to extend and compress social networks. When geneticists extend lines of ancestry tens of thousands of years into the past using DNA evidence, they are creating affinities in the present; just as often, the identities and affinities of the present are transported back through time. Hence, the National Geographic Society can comfortably merge past and present in its Book of Peoples of the World, a compendium in which 222 ethnic, linguistic, and national categories are sorted into seven major culture areas, all of which are linked (genetically) to ancestral human populations many thousands of years old.46 (Think of
the Nuremberg Chronicle, updated.) Little is made of the fact that these seven culture areas would not have been recognizable as such before the age of European expansion and that each is now demographically mixed, except to imply that human diversity is somehow threatened, not enhanced, by this process. Even less is made of the fact that Masai tribesmen, German burghers, and Gypsy tinkers are historically recent human categories, each defined by principles other than biogenetic relatedness. These points of confusion are useful. They enable National Geographic to persuade thousands of American readers that the cultural and biogenetic variations found on the planet today are worth savoring, like the quirks of so many relatives; that the bewildering array of colors, languages, and cultures we see around us is nothing to be afraid of. It is the natural result of the human family’s spread across the planet.

All kinship systems double as history and geography, and each predisposes us to draw peculiar conclusions. Ojibwa, for instance, would not be troubled by the fact that Chief Berens was as closely related genetically to a female parallel cousin (whose he could not marry because she belonged to his clan) as he was to a female cross cousin (whom he could marry because he belonged to another clan). In many societies, people believe that they descend originally from birds, land forms, plants, or spiritual beings (and are thus essentially unconformable to National Geographic’s Book of Peoples of the World). What is constant in human kinship systems, however, is the use of mediating objects to constitute, extend, contract, and increase the predictability of human relationships. Kinship systems and kin terms are best thought of as a particular kind of mediation. They have objective qualities in their own right, and they are expressed and experienced through objects. As tools of mediation, kinship systems figure as the third party to any exchange that brings two humans, or collective bodies of humans, into relation, literally or figuratively, as kinds. Kinship closes and creates gaps, just as historians do.

FACTORS OF THREE

The image of two parties connected by a third surfaces repeatedly in contemporary depictions of human society over time, and this tendency is strong evidence (for those who still need it) that the study of deep history is itself an exercise in kinshiping. Since the time revolution, we have witnessed a parade of three-part typologies of human development: stone, bronze, and iron; savage, barbarian, and civilized; foraging, agricultural, and industrial. These layer-cake typologies could also be projected onto spatial or temporal grids. The Polynesians who awaited French explorers like Baudin were considered savages here and now, representative of the savages Europeans must have been in the remote past; either way, they were made into kin of a distant, primitive sort.

Some tripartite sociological models seem synchronic but have strong diachronic implications. Marxist concepts of base, structure, and superstructure can be mapped onto older typologies in which “primitive” life is skewed toward infrastructural concerns (survival, reproduction, obtaining food), and “civilized” life is marked by dense elaborations of superstructure (art, literature, religion, philosophy). Likewise, Eric Wolf’s discussion of modes of production, which divides human societies into kin-ordered, tributary, and capitalist economies, can be projected into deep time, despite Wolf’s reluctance to do so. It is perfectly sensible to conclude that kin-ordered modes of production came first (because kinship is ancient), followed by tributary modes (which require social stratification, a novelty compared to kinship systems), and then capitalist modes (which are very recent). The same implicit temporality is central to comparisons of economies based on reciprocity (which came first), redistribution (next), and market exchange (most recent), or to comparisons of political systems based on egalitarianism (bands and tribes), rank (tribes and chiefdoms), and social stratification (chiefdoms and states).

Whether these temporalities are ill-founded or empirically justifiable—they can be either, in theory and in practice—they are traveling devices akin to kinship. In almost every case, the key contrast is between the near and far ends of a spectrum, with a middle term figuring as the medium of translation, as the kinshipping device. This form of translation works to the extent that we assume the three stages belong to a progression, that they are linked through a process akin to (or, in some cases, equivalent to) descent or maturation. The Darwinian approach to deep time, with its reliance on genealogical explanations of variation, imbues these models with a sense of progress and directionality in which Darwin, the model Victorian, firmly believed; at the same time, however, Darwinian thought could, and eventually did, opt for explanatory accounts that accentuated adaptive radiations in which change was gradual and cumulative but could not be described as inherently progressive or regressive.

If we make descent and natural selection central to our theories of
human variation over long periods of time, we can dispense with stages and deal instead with spectra. Some of the most influential approaches to deep history now take the latter approach. Robin Dunbar’s theory of the social brain, for instance, proposes that human brains have become bigger over time because natural selection has favored individuals who live in larger social groups over those who live in smaller ones.\footnote{To sustain larger groups, individuals need larger brains (to accommodate language capacity, because language, in addition to grooming, is a means of creating social solidarity among humans). The model is genealogical; it transects human, nearly human, and nonhuman primate species; and the process it depicts (brains becoming bigger, smarter, and more human) is so commonsensical that there is little need for translation. To succeed at kinship development, the advocates of this theory contend, it helps immensely to have big brains; and, not surprisingly, we do! As a translation device, the social brain stands between us and a chimp; between us and \textit{Homo erectus}; and between us and anything with a smaller brain.}

Explanations based on rigorous application of selection theory avoid translation (or make it a nonissue) by eliminating gaps in the story of human development. Instead they render it continuous in ways that are in fact averse to the logic of kinship, which bridges real gaps in time and space, thereby enabling humans to move away from each other and then return. Tripartite models that preserve this structure of fission and fusion, with a middle term as connector, continue to thrive in recent studies of deep history, largely because they reenact, in the present, a set of processes that we now believe developed over millennia. Tripartite models make it possible to think through objects (or, more accurately, to think our way through to objects) that belonged to active kinship networks in the remote past. Examples of this theoretical style include the following:

1. Alan Barnard’s division of hominin history into phases of “proto-kinship” (marked by sharing and inclusive kinship, characteristic of australopiths and \textit{Homo erectus}), “rudimentary kinship” (marked by us/them kinship, exchange, and incest rules, characteristic of archaic \textit{Homo sapiens} and Neanderthals), and “true kinship” (with fully developed kinship systems, universal kin categorization, explicit rules of sharing, exchange, and kin behavior, characteristic of modern \textit{Homo sapiens}) (figure 5).\footnote{Barnard sets these stages parallel to similar stages in human language development and then inserts ancestral hominins into each stage.}

2. Steven Mithen’s division of human development into prehistoric, evolutionary time, before roughly 50,000 years ago (which was not historical and has no history) and a more recent period, which is historical and can be so because people had developed, by this time, a “modern mind” (figure 6).\footnote{This historical period is divided into three stages: the prelude to history (50,000–10,000 years ago); the Neolithic revolution (10,000–5,000 years ago); and the last phase, beginning 5,000 years ago, which includes the contemporary world. The Neolithic revolution is assimilated to the modern world, and the prelude to history verges into the remote, evolutionary past.}

And, finally, to make a trio of our own:

3. Clive Gamble’s division of the hominin past into three periods: the long introduction (which runs from 2.6 million to 100,000 years ago), the middle ground (100,000–20,000 years ago), and the short answer (20,000–5,000 years ago) (figure 7).\footnote{Although Gamble’s typology registers phases, and poses a zone of translation ap}
called the “middle ground,” it is designed to reflect the continuous nature of change. As humans move through the three domains, they transition, in fits and starts but cumulatively, from technologies that privilege instruments to those that privilege containers; from bricolage and improvisation to modularity and engineering; from smaller to larger brains; from smaller, intense kin networks to larger, extended ones; from concentration in Africa to global expansion; from subsistence strategies based on models of “the giving environment” to those based on “growing the body”; and from communication through objects and material metaphors to communication based increasingly on linguistic metaphors.

Each of these approaches poses and solves a unique set of problems, but when the three models are superimposed, the variations that result are telling. Mithen’s stark discontinuity between history and prehistory is erased in Gamble’s system of gradations. Barnard’s types map well onto Gamble’s, but much of the progression Barnard describes belongs to a time when, according to Mithen, “little of significance happened.” In all three models, the last 5,000 years belong to a different kind of history (fully modern), or represent a brief continuation of a complex jumble of trends and consequences that came to a head in the development of sedentism, domestication, social inequality, and city and state formation. The past 5,000 years constitute the realm of “shallow history,” where patterns and events pile up with incredible speed. Keeping abreast of them requires an almost journalistic pace of reportage, not the grand, synthetic theory appropriate to a span of 2.6 million years.

The essential kinship function of these tripartite models of deep time can be seen if we sort them into a kindred schema that Julian Pitt-Rivers used to explain the importance of hospitality in human societies, especially those of the Mediterranean “prior to modern urban development.” Although it is drawn to fit entirely within the past 5,000 years, an age of houses, villages, and agriculture, Pitt-Rivers’s model, like those of deep time, has a recent period—in this case, the era of the modern city—to which it apparently does not apply. The social world of the premodern Mediterranean was, according to Pitt-Rivers, divided into (1) the house, which is internally divided into a private sphere associated with women and dependents, and a more public space where guests
can be received; (2) the areas outside the house, the “common meeting grounds of the whole community,” which is made up of similarly structured households whose members know each other and have real, continuous relations of rivalry and alliance; and (3) the “outside world” beyond the community, “from which come strangers, that is, unknown persons who, unlike the fellow-members of the community with whom relations are habitual and clearly structured, remain mysterious, their nature and their power in doubt and who derive from their strangeness a preferential relationship to the Divine.”

The transposition of categories from this model onto those depicting deep time is straightforward and suggestive. The household is analogous to Gamble’s “short answer,” Barnard’s zone of “true kinship,” and Mithen’s “last 5,000 years.” The community is Gamble’s “middle ground,” Barnard’s zone of “rudimentary kinship,” and Mithen’s “Neolithic revolution,” and so on across the types. The world of strangers is the truly remote world in all these models; it is remote temporally for our paleoanthropologists and spatially for Pitt-Rivers. The hominins ancestors who occupy this realm are mysterious indeed. Gamble, in the account of the “long introduction,” confesses to an inability to figure out what these creatures are up to: “puzzles abound,” and material remains are “difficult to read.”

This quality of strangeness is pervasively felt by scholars who study the deep past. Like the strangeness of the guest in Mediterranean societies, the strangeness of human ancestors is captivating. It provokes a desire to accommodate and examine their otherness (the way one stares at a stranger sipping tea in the guest room) without necessarily assimilating it (the guest is not allowed to enter all parts of the house). In his recent study of human food cultures over time, Martin Jones acts out these tendencies in written form. He begins each chapter of *Feast: Why Humans Share Food* with an imaginative narrative in which he reconstructs events at a famous archaeological site. In the oldest sites, he writes strangeness into his accounts of archaic *Homo sapiens* (who mix animal butchery with sexual exchanges in ways that recall the behavior of chimpanzees collectively devouring a red colobus monkey) and Neanderthals (whom he depicts as slightly autistic, avoiding each other’s stares, acting in parallel but not quite together, and not thinking thoughts but considering images that “echo in their minds”).

In many ways, these storytelling gestures mark the outer limits of human kinship. Insofar as Jones suggests that the gap cannot be closed and indeed should be left open out of respect for the differences and imponderables the archaeological record holds. Was this odd pile of mammoth jaws a shelter? Did these people exchange men and women between groups? What did they give in exchange? Did these changes create what we would call kinship, or marriage? Did they eat meals together, or in rank order, or did they eat randomly throughout the day, as hunger and opportunity arose? Answers to these questions must be formed carefully, just as the treatment of a stranger in the Pitt-Rivers model must proceed carefully. If the guest is to be brought into closer relations with his hosts, this transition can be accomplished only by securing a place for him, and for his apparent differences, in local society. As Pitt-Rivers put it, “the community” lies between the precincts of intimacy and those of the extraneous world, “with which contact is exceptional, sporadic, and subject to special provisions.”

In Mediterranean settings, these interactions between the remote and the familiar are conducted through ritualized greetings, gifts of food, access to sovereign spaces, and physical protection. The social distance between stranger and household is continually renegotiated using conventions made available to both by the larger society. Pitt-Rivers locates this social drama (which always has a stagelike quality) in a particular cultural tradition, but its key components are ethnographically widespread, and he seems to realize fully how fundamental the arrival and reception of the stranger has been to the development of human society over time. His tripartite schema is a model of spatial relations, but its grammar can be temporalized to produce a model of kinship that replicates not only what paleoanthropologists do when they create tripartite models of their own, but also what humans do, and have done, when using kinship to travel.

**CONCLUSION: RETURNING HOME**

The study of deep history is ultimately an encounter with strangers, but with strangers whose otherness seems potentially intelligible and with whom a relationship seems possible, if only through interaction with their objects. To the extent that material residues left by earlier hominins were shaped by object relations ancestral to our own, we can work back toward those relationships, using analogies and recurrent patterns, to arrive at relations more familiar to us. This is what historians do with their “documents.” It is what humans did as they journeyed to the uttermost ends of the Earth, constantly doubling back, reestablishing ties, and coaxing others to join them.
Kinship, we have argued, is a social technology that enables two parties to create relationships through the mediation of abstract categories, or absent thirds, and the objects that convey them. We should end this journey, then, by insisting that kinship is of no value if it does not allow for infinite returns. The fascination with deep history we explore in subsequent chapters might have begun, for us, in the years surrounding 1859, when the collapse of biblical time compelled us to retell the human story on a larger temporal scale. But this new fascination with the remote past inevitably reconnects us to the past 5,000 years, the period left out of deep history (perhaps because it is the period that genuinely animates it). If this reconnection across time were not to occur, the intellectual enterprise we undertake here would not be kinshiping of the human sort.

Interacting with our stranger kin, as their imaginary hosts and guests, requires that we stretch our imagination to accommodate them, working our way back to them gradually, using all the links (and enlisting the aid of all the human intermediaries) we can discover. The moment of hospitality has been essential to human kinshiping. It enables host and guest to reinterpret the social world they inhabit through encounter and then to move on, or to establish relations of a more durable sort. As students of deep history, we will know this interpretive connection has been made—alas, for us, only in the realm of imagination—when the past 5,000 years seems as new to us, as strange and distinctive, as the oldest eras of what, since roughly 1859, we have come to know as "prehistoric times." Then, in short order, we will ask the most inevitable of human questions: "Where do we go next?"