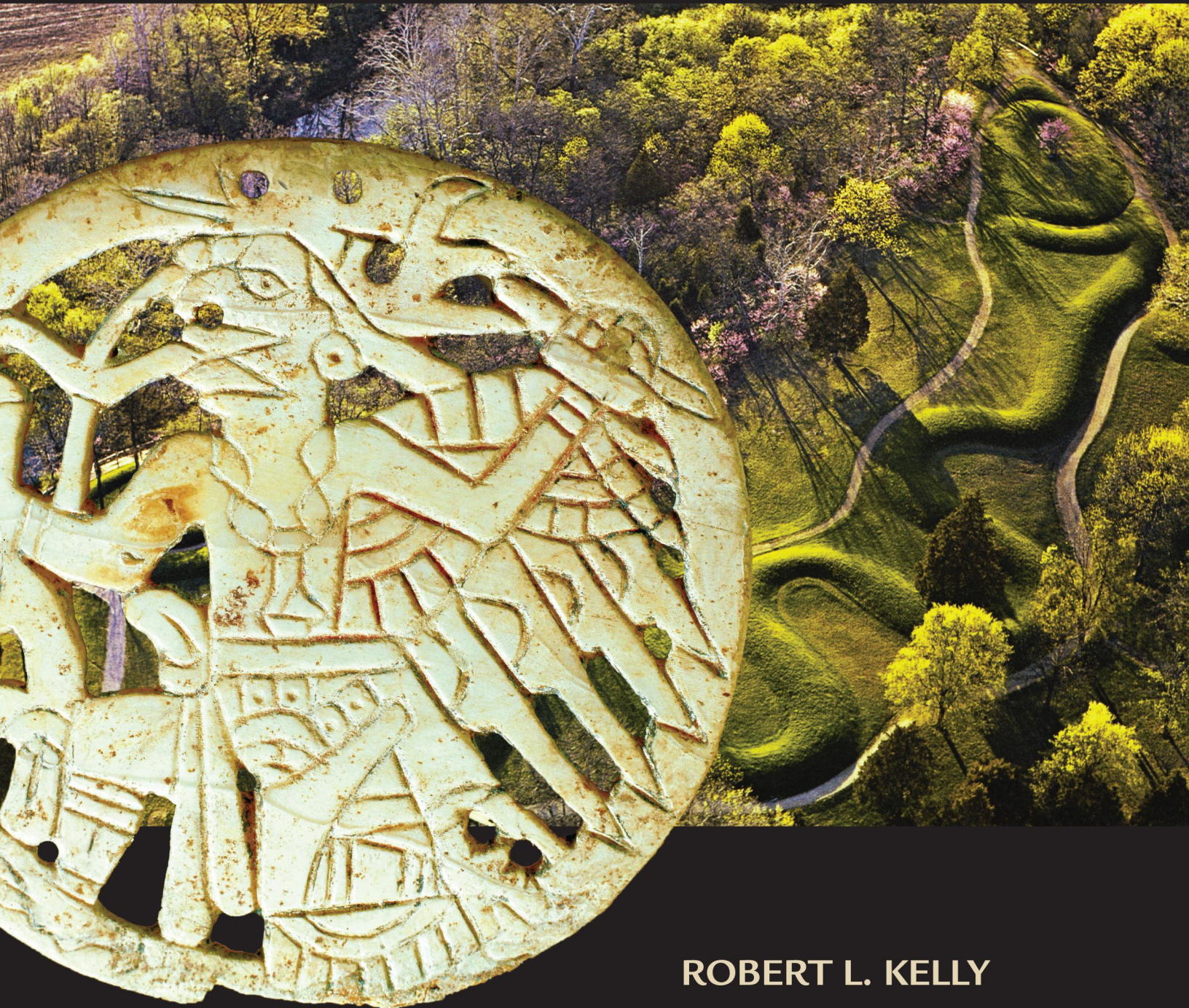


SEVENTH EDITION

Archaeology



ROBERT L. KELLY

DAVID HURST THOMAS

Archaeology

SEVENTH EDITION

Robert L. Kelly

UNIVERSITY OF WYOMING

David Hurst Thomas

AMERICAN MUSEUM OF NATURAL HISTORY



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For Matt and Dycus, who loved big piles of dirt.

—R.L.K.

For Lor.

—D.H.T.

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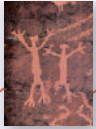
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PREFACE

ARCHAEOLOGY, seventh edition, is a user-friendly introduction to archaeology: what it is, who does it, and why we should care about it. This text addresses archaeological methods and theory, yet it departs in some important ways from the standard introductory textbook.

Students tell us that they sometimes don't bother reading the introductory textbooks they've purchased—whether the books are about archaeology, chemistry, or whatever. We've heard several reasons for this paradox: The instructor covers exactly the same material, using the same examples as the text—so why bother reading what you can get condensed in a lecture? Or their textbooks are deadly dull, written in arcane academic jargon that no one can enjoy reading. Still others tell us that they take an archaeology course just because it sounds like a fun way to fulfill a distribution requirement—but the text actually has nothing to say to them.

We cannot do much about your instructor, but we've heard you about the rest. Accordingly, we picked many of the book's topics with these students in mind.

As it turns out, these are the very subjects that budding career archaeologists should know. Although many archaeology texts avoid sensitive issues, such as the excavation of the dead or what archaeology has to say about climate change, we don't shy away from controversy. In fact, we think that these are precisely the issues that matter most to students and to instructors, so we've not backed away from them.

This is why instructors tell us they have used previous editions of this text precisely because their students will actually *read* it.

Personal Examples, High-Interest Topics

Most archaeology texts maintain a fairly encyclopedic and dispassionate approach. But we cannot do it that way. To be sure, modern archaeology is a specialized and complicated academic discipline, with plenty of concepts, several bodies of theory, and a huge array of analytical methods—all things we'd like students to learn about. But we think that the best way for students to understand archaeology (or any subject, for that matter) is through a few well-chosen, extended, personalized examples—stories that show how archaeologists work through actual problems in the field and in the lab. So that's the approach we take here.

Writing a textbook is not easy. We must provide a solid foundation for students who intend to become professional

archaeologists. This requires a thorough review of the discipline, including all its major concepts and jargon. But we are also writing for the many students who will *not* become professional archaeologists.

About This Edition

Thomas published the first edition of *Archaeology* back in 1979. Each succeeding edition has retained the basic coverage and writing style that users have praised, but every edition has reflected up-to-the-minute changes in the discipline. By the time the fourth edition rolled around, Thomas decided one person just couldn't adequately cover the field anymore, and he invited Kelly to join in the project. The two first met more than 40 years ago, when Thomas was excavating Gatecliff Shelter in Nevada and Kelly was a gangly, enthusiastic high school kid. When the time came to expand the authorship, Thomas turned to Kelly as a coauthor. This partnership continues with the present seventh edition. We've updated this edition, keeping the same number of chapters, but replacing old material with newer examples, especially in the areas of remote sensing and genetic analyses, and the photos and graphics for a better visual presentation that enables students to see more clearly the key points of a concept or example.

Aids to Learning, Old and New

What Does It Mean to Me? Throughout the text, we address issues about archaeology that should resonate with students, such as buying artifacts from online auction houses, climate change, human alteration of the environment, and the excavation of human burials. We think that students will find these topics thought provoking (and these sidebars could easily form the basis of writing assignments or group discussions).

Looking Closer A popular feature from earlier editions, these sidebars cover ancillary topics in each chapter. In addition, some seek to be helpful to budding archaeologists, suggesting equipment students will need for survey and excavation, or what courses they might take. Others look at the lighter side of archaeology, such as how sites get their names, or give personal glimpses into fieldwork—what it's like to do survey or ethnoarchaeology.

In His/Her Own Words In several places we found that others told their own first-person stories better than we could, so we've included their words to help personalize the text.

Profile of an Archaeologist We've kept these five sidebars from the sixth edition to emphasize the diversity of today's working archaeologists and to illustrate the varied ways in which archaeologists make a living.

To help students master this complex, fascinating discipline, we include a running glossary in each chapter (with glossary terms defined at the bottom of the page on which the term is introduced) plus an alphabetized glossary at the end of the text. In addition, we've continued to include with each chapter's preview several questions that students should be thinking about while reading. At the end of each chapter, we've provided brief answers to those questions to help students review the chapter's key points. We've refrained from placing citations in the text, but students can find references and additional readings in the updated chapter-by-chapter bibliography. Page references for the occasional longer quotes that appear are noted in the relevant bibliographic entry.

A Distinctive Approach

The following strategies all contribute to a fuller, more up-to-date exploration of the field:

Discussions of archaeological objects in context You'll notice that we (deliberately) rejected a more encyclopedic approach, which tends to encourage students to simply memorize a laundry list of techniques without context. Instead, we've embedded and contextualized discussions of things like stone tools and ceramics in substantive examples. For example, we talk about pottery—its manufacture and basic constituents—in Chapter 11, which deals with using petrographic analysis to track down trade networks. This way, students can learn about these basic archaeological objects in ways that carry significance for them—to see, for instance, why it might be useful to know where a sherd's temper comes from.

Balanced coverage: depth, breadth, theory The text is not an encyclopedia, but it does cover the field in a comprehensive way. Given the background knowledge that first- or second-year college students bring to an introductory course, this text strikes a balance among the different directions that archaeologists take. Although this text is one of the most readable available, it is not dumbed down, and places the thought process of archaeology in a wider field. Students learn about science and challenges to it, the Enlightenment, and evolutionary thought.

Expanded geographic coverage Many of the examples used in this text are drawn from our own research projects in the western and southeastern United States. Between us,

we've spent nearly a century on field projects, and they are what we know best. But we've also expanded the geographic coverage of previous editions, drawing upon work from many places around the world. Although the text is focused, it is not provincial—and should inspire classroom discussions of research projects of all kinds.

All in all, we think you'll find this text is one that both instructors and students will appreciate.

Organization of the Text

We constructed this text so that various ideas build upon one another. We know that each archaeologist teaches his or her introductory course differently, but you should know that many chapters cross-reference material discussed in other chapters. We note each instance within the text.

The text begins with an introduction that focuses on war and archaeology—a purposeful selection because it shows both the importance of prehistory and the great peril today facing the evidence of our common past. Archaeological sites are being bombed and looted by insurgents seeking cash for weapons. Smashed monuments and museum displays obviously cannot yield information about the past.

Chapter 1 lays out the history of archaeology by introducing several individual archaeologists who have collectively defined the field. In Chapter 2, we relate archaeology to the rest of anthropology and wrestle with the two major theoretical paradigms of contemporary archaeology. We discuss the intellectual process of archaeology in terms of low-, middle-, and high-level theory. This somewhat simplified presentation provides an entry into the diversity of contemporary archaeology. And rather than come down on the side of processual or postprocessual archaeology, we take a centrist position that we believe characterizes the majority of working archaeologists today.

Chapters 3 and 4 provide the nuts and bolts of archaeology, explaining how archaeologists go about doing surface survey, using remote sensing equipment, and excavating sites. In these chapters, we try to give students some sense of how much fun fieldwork can be.

Chapter 5 covers geoarchaeology, emphasizing how archaeological sites are formed, but also covering archaeological stratigraphy, showing students how a site's stratigraphy can be “read” to provide a context for the artifacts contained there. Chapter 6 covers dating methods used in prehistoric and historic archaeology. The range of dating technology increases annually, and we had to make some tough choices about what to include. The major purpose of this chapter is not to chronicle all available methods, but rather to provide enough information about key techniques so students can relate dating technology to ancient human behavior. Chapter 7 discusses various archaeological concepts—types,

cultures, and phases—that help us construct large-scale patterns in space and time. Our goal is to help students see the world as archaeologists view it, as an ever-changing spatial and temporal mosaic of material culture.

Chapters 8 through 12 show how archaeologists go about breathing some anthropological life into this spatial and temporal mosaic—how we infer human behaviors from material remains. Chapter 8 covers middle-level theory—how it differs from standard analogy and how archaeologists construct it through taphonomic, experimental, and ethnoarchaeological research. Our goal here is to convince students that archaeologists don't just make stuff up, but instead give plenty of thought to how they infer ancient behavior from material objects and their contexts. Chapter 9 recounts how archaeologists reconstruct diet from faunal and floral remains and even how they can infer symbolic meanings attributed to the natural world by ancient peoples. In Chapter 10, we consider what we can learn—about diet, disease, and workload—from human skeletal remains, even at the molecular level. Chapter 11 shows how archaeologists reconstruct social and political systems of the past and looks at gender, kinship, and social hierarchies. Chapter 12 presents how archaeologists address the symbolic meanings once attached to material remains; here, we look at the nature of symbols and what archaeologists can realistically hope to learn about them.

Chapter 13 looks in more detail at two major transitions in human history: the origins of agriculture and the origins of the state. Chapter 14 explores historical archaeology, especially those aspects that set the field apart from prehistoric archaeology—the ability to uncover “hidden history,” to provide a forensic analysis of historical events, and to present alternative perspectives on written history. Chapter 15 examines the legal structure of modern archaeology, emphasizing the field of cultural resource management (how it came to be and the critical role it plays in archaeology today). This chapter also covers international laws on antiquities and the subjects of reburial and repatriation in some detail. Finally, Chapter 16 looks at the future of archaeology, especially the ways in which archaeologists apply their knowledge to contemporary problems. We conclude by discussing the increased involvement of indigenous peoples in the archaeology of themselves and asking whether we are on the brink of another revolution—one that might produce a newer “new” archaeology.

Supplemental Materials

This text also comes with a strong supplements program to help instructors use their class time most effectively and to aid students in mastering the material.

CourseMate for Archaeology 7e

Cengage Learning's CourseMate for Archaeology 7e brings course concepts to life with interactive learning, study, and exam preparation tools that support the text content. Watch student comprehension soar as your class works with these interactive materials! CourseMate for Archaeology 7e also includes ebook access.

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The Instructor's Resource Center includes an instructor's manual, offering chapter outlines, learning objectives, key terms and concepts, and lecture suggestions; a test bank with multiple-choice, true/false, and essay questions; and PowerPoint slides.

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Case Studies in Archaeology, edited by Jeffrey Quilter:

Enrich your students' study of archaeology with the many contemporary case studies in this acclaimed series. Students will learn how archaeologists study human behavior through analysis of material remains. They will learn about new interpretations and developments within the field—and the importance of the archaeological perspective in understanding how the past informs our experience of the present. These engaging accounts of cutting-edge archaeological techniques, issues, and solutions—as well as studies discussing the collection of material remains—range from site-specific excavations to types of archaeology practiced. Visit www.cengage.com/anthropology and see “Anthropology and Archaeology Case Studies” for complete information on all case study titles available.

Who Helped Out?

Despite the personal flavor of these pages, this text was created by more than four hands. Many people helped out, and we'd like to thank them here.

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Keeping in Touch with Your Authors

We see this textbook as an opportunity to become more available to both instructors and students. With email, we can all have casual conversations with people around the globe, in more or less real time. We want to know what you think about this text and about archaeology—what you like and

what you don't care for—so we can improve future editions. We encourage you to write us at the email addresses below. Provided that we're not off on some remote dig somewhere, we'll get back to you right away. Drop us a line—we'd enjoy hearing from you.

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A Note about Human Remains

In several instances, this book discusses important new frontiers of bioarchaeological research but also underscores the importance of dealing with human remains in a respectful and sensitive manner. Several Native American elders have requested that we refrain from publishing photographs or other depictions of American Indian human remains. Not all Native Americans feel this way, but we respect this request, and no images of Native American skeletal remains appear in this book. Should other groups express similar concerns, their requests will be addressed in succeeding editions as appropriate.

About the Petroglyphs

Sidebars used throughout this text are highlighted with several rock art symbols. To the best of our knowledge, they do not infringe on anyone's intellectual property rights. They are not intended to suggest a cultural or religious connotation.

ABOUT THE AUTHORS



Authors Robert L. Kelly and David Hurst Thomas, in Wyoming's Wind River Mountains.

ROBERT KELLY began collecting arrowheads in farmers' fields when he was 10 years old and has participated in archaeological research since 1973 when he was a high school sophomore. He has worked on excavations in North and South America and conducted ethnographic research in Madagascar. He is currently conducting research into the Paleo-Indian archaeology of Wyoming's Bighorn Mountains. A former president of the Society for American Archaeology and current editor of the Society's flagship journal, *American Antiquity*, Kelly has published more than 100 articles and books, including *The Lifeways of Hunter-Gatherers*. He has been a professor of anthropology at the University of Wyoming since 1997.

DAVID HURST THOMAS has served since 1972 as curator of anthropology at the American Museum of Natural History in New York City. A specialist in Native American archaeology, Thomas discovered both Gatecliff Shelter (Nevada) and the lost sixteenth-/seventeenth-century Franciscan mission Santa Catalina de Guale on St. Catherines Island, Georgia. Since 1998, he has led the excavation of Mission San Marcos near Santa Fe, New Mexico. A founding trustee of the National Museum of the American Indian at the Smithsonian since 1989, he has published extensively, including more than 135 scientific papers and 125 books—including the best-selling *Skull Wars: Kennewick Man, Archaeology, and the Battle for Native American Identity*. As an archaeologist, Thomas likes "old stuff," including his 1961 Corvette, his 120-year-old house, and the Oakland Raiders.

INTRODUCTION

As we write this edition of your textbook, archaeology is front-page news. Such publicity usually is a good thing, informing the world about some spectacular find, maybe a city buried beneath Egypt's sands or the newest spellbinding fossil from Africa. But today's news about archaeology is not good at all because it's about war and the destruction of our human past.

Wars have long destroyed cultural icons. Centuries ago, Maya warriors not only killed an opposing force, but defaced and toppled their cities' statues and stelae to insult their enemies as well. Al Qaeda fundamentalists not only flew airplanes into the World Trade Center because the towers were such large targets, but also because these monuments were potent symbols of America. During World War II, the Nazis (and later, the Russians) stole paintings and artifacts from museums and private homes in order to "own" the past of others, because people with no history are hardly people at all. What they could not cart away, they often destroyed (as graphically portrayed in the George Clooney film, *The Monuments Men*).

But the ongoing destruction of the Middle Eastern past is beyond belief.

In 2001, the Afghanistan Taliban turned artillery onto giant Buddha statues carved into cliffs and two years later, the Baghdad Museum was ransacked by Iraqis as American forces entered the city (see Chapter 15). During the so-called Arab Spring uprising in Egypt, citizens of Cairo linked arms to form a human barrier to the Cairo museum, but criminals still broke in through the roof. More recently, the targets are Iraq, again, as well as Syria, home of the world's first agricultural villages and six UNESCO World Heritage sites (and 12 others that are under consideration), whose archaeology has been devastated. Dozens of sites in Syria and Iraq have been looted and deliberately bulldozed . . . destroyed.

One sad example is the site of Apamea, in western Syria. Established after Alexander the Great's conquest of Syria, Apamea was occupied from about 300 BC to AD 700, and then abandoned. The site is a virtual time capsule of the Hellenistic (late Greek) and Roman eras, a treasure trove of information to archaeology. Although the site suffered some looting over the years, this was nothing compared to what happened after the Syrian civil war began in early 2011.

Archaeologists Jesse Casana and Mitra Panahipour used aerial imagery, often from the publicly available Google Earth, to document Apamea's tragedy. Images from 2010 and 2011 show some evidence of looting, but look what happened in the fall of 2012 (see figure). Literally thousands of holes appeared during a few weeks, some large enough to have been dug with machinery (these were not archaeological excavations because archaeologists dig far too slowly to

remove such large amounts of earth in such a short time; and we dig square, not round holes). And the looting has only become worse.

Who was responsible? There are many parties fighting in Syria, but which ones looted Apamea? The images tell us. The government forces of Syria's President Assad controlled the site in the fall of 2012—their tents and armaments appear in the photos. And the government-held portion of the site was covered by looter holes—hardly a square meter was spared—while the privately held portion of the site was virtually untouched. It's inconceivable that the military could have been stationed at the site and not have known of the looting. If the military were not directly involved in the looting, then they certainly turned a blind eye to it. Imagery from a dozen other sites also shows military installations on the sites themselves, and pits that were not there prior to 2012.

This isn't just a site being destroyed: The locations of the looting holes suggest thieves deliberately targeted Hellenistic, Roman, and early Islamic-age sites and occupations. Earlier sites, those with less marketable antiquities, were ignored by looters, but they were not spared destruction. Earlier sites are often culturally constructed hills (*tells*) that provide the high points desired by the military. So they were bulldozed and trenched for artillery emplacements.

That was in 2012. By 2015, things were even worse.

The Islamic State (IS, which also goes by the acronyms ISIS and ISIL) rose about 2006, and is an especially violent strain of Islamic fundamentalism. Active in Syria and Iraq, they show little mercy to their enemies, videoing public executions and uploading them to the Internet. Their hatred extends to everything that does not fit their narrow version of Islam. Islam does not approve of images of the prophet Mohammed, but the IS extends this to all images, especially those of non-Islamic religions. And so they thought it logical to take sledgehammers to the limestone statues, sculptures, and reliefs in Iraq's Mosul Museum, smashing irreplaceable artifacts of the ancient second-century AD city of Hatra, and of the Assyrian Empire. Their hammers and drills destroyed the colossal human-headed winged bulls outside the museum, at the so-called Nergal Gate, the entrance to Nineveh, an Assyrian capital of the seventh century BC. The vandals boastfully posted videos of these acts as well.

Why destroy such priceless relics of history? One man on the IS video explained the artifacts "were idols and gods worshipped by people who lived centuries ago instead of Allah. . . . Our prophet ordered us to remove all these statues as his followers did when they conquered nations."

But just like the Syrian army, IS tolerates looting. There are reports that IS extracts a percentage of the profit by



Google Earth photos of the site of Apamea taken, from left to right, July 19, 2011, April 3, 2012, and March 5, 2014. In less than three years, the site suffered more damage than in the past several hundred. Left: Map Data, Google, © DigitalGlobe 2015; Middle: Map Data, Google, © DigitalGlobe 2015; Right: Map Data, ©2015CNES/ASTRIUM, © Google, © Basarsoft

licensing the looters who sell artifacts to unscrupulous buyers in other countries. Some have suggested that, in fact, IS destroys archaeology in order to drive up the price of those artifacts they allow to be smuggled out.

And the situation in Syria and Iraq is becoming worse. As we finalized this book in August 2015, we received word that IS terrorists publically beheaded Khaled al-Asaad, a renowned 82-year-old archaeologist, and hung his body from a Roman column in the famous archaeological site of Palmyra.

Neither of us believes that archaeology is the most important thing on earth, but the past does matter—to the direct descendants for sure, but also to those who see the past as their own personal cultural diary. And, in fact, the past matters to the entire world, because it is a record of what it means to be human. Upon entering the Baghdad Museum for the first time after its restoration, an Iraqi gardener remarked, “This is Iraq’s history,” and then he added trenchantly, “You can say it’s the world’s history.”

Archaeologists today can only monitor the damage in places such as Syria, IS-controlled Iraq, and Afghanistan. But someday, someone will put what survives back together.

It will take time. Seventy years after the end of World War II, art caches still turn up in Germany, and Russia still refuses to return what it took. With hope, peace will someday reign over the troubled Middle East. And when it does, Syrian and Iraqi archaeologists, aided by their international colleagues, will be there to gather information from looted sites, to restore smashed statues, to repair what can be repaired, and to recover the Middle East’s past, which in one sense belongs to us all.

We don’t expect every reader of this book to become a professional archaeologist. Many of you are probably taking this course to fulfill a distributional requirement and because archaeology fascinates you. But we want to use this text to demonstrate that *the past really matters to you*. We provide a number of text boxes called “What Does It Mean to Me?” Sometimes we ask you to confront ethical issues, such as the excavation of human burials or the trafficking in ancient artifacts. Sometimes we show you how knowledge of the past can be crucial for planning the future. After we explore the practice of archaeology, we will return to the implications of war and looting and the future of archaeology and the archaeology of the future.



The site of Abu Simbel in Egypt, moved piece by piece in 1968 when the Nile's Aswan Dam was constructed. When first entered by a European, the antiquarian Giovanni Belzoni in 1817, the temple was half-buried in sand.

Meet Some Real Archaeologists

LEARNING OBJECTIVES

AFTER READING THIS CHAPTER, YOU SHOULD BE ABLE TO ANSWER THESE QUESTIONS:

1. What makes an archaeologist an archaeologist?
2. Why is the study of the past controversial?
3. How was the rise of archaeology connected to the discovery of humanity's "deep" antiquity?
4. Who were the antiquarians, and why include them in a history of archaeology?
5. What trends have characterized archaeology over the last century?

PREVIEW



This book is about what archaeologists want to learn, how they go about learning it, and what they do with that knowledge. These goals require archaeologists to piece together pictures of the past based on scraps of bone, rock, pottery, architecture, and other remains that are hundreds, thousands, or tens of thousands of years old. And further complicating this already difficult process is the fact that archaeology, by its very nature, carries with it some serious ethical dilemmas.

We will look at some of the very different perspectives that characterize today's archaeology. These approaches sometimes coexist, but sometimes they clash. You should keep two things in mind as we discuss these diverse archaeological perspectives: First, no archaeologist fits perfectly into any single perspective, and second, there is more than one way to do good archaeology.

Introduction

Who is an archaeologist? Is it Indiana Jones, fighting Nazis and grabbing gold statues from curse-laden catacombs? Is it Lara Croft, battling all manner of beasts to retrieve some ancient treasure that holds the secret of time? Sydney Fox on *Relic Hunter*? Or is it Josh Bernstein or Hunter Ellis, on the History Channel program *Digging for the Truth*?

These aren't real archaeologists, of course, and the media certainly play up the physically thrilling side of archaeology, the mystery of discovery, and the potential threats. Archaeology is indeed exciting, even if we don't do our research with whips and guns, have a camera crew trailing behind us, or battle ancient beasts. Closer to the mark is *Time Team America*, the PBS science reality series that sends actual archaeologists on a race against time to excavate historic sites around the nation. But even with urgency, we certainly don't just grab the good stuff and dash out of the temple. We work with notebooks and pencils, measuring tapes, calipers, graph paper, and some high-tech tools like laser transits and ground-penetrating radar (more on those in later chapters). We document everything we find—*everything*—with a precision that's often mind-numbing. But the results can be equally mind-blowing. We can extract blood from stone tools and determine the age of remains sometimes millions of years old. We can date the last time dirt was exposed to sunlight. We can tell you what season an animal was killed and how it was butchered. We can reconstruct ancient social

and political organizations and can trace out trade networks. From skeletal remains we can tell if a person ate much plant food or meat, what kind of work he or she performed, where they were raised, and what physical traumas they suffered.

This kind of forensic work takes years of careful, precise analysis. But the result is an understanding of humanity that would otherwise remain lost to us. Archaeological field research is sometimes exciting and always fulfilling because of how this fieldwork provides a unique window to the past. You've probably heard the saying (by philosopher George Santayana) that "Those who cannot remember the past are condemned to repeat it." Archaeologists believe this, and in the last chapter we'll show you why archaeological knowledge is crucial to constructing the future.

We think the best way to introduce you to archaeology is through its history. Archaeology is a curiously young field that has changed dramatically over the past century and is still experiencing some growing pains. But whatever the change, the fact remains that archaeology is all about ancient objects—the **artifacts** we retrieve from sites remain the primary source of our information. Archaeologist-philosopher Alison Wylie (University of Washington) says that archaeologists "think from things." This is true, but the history of archaeology reflects a shifting relationship with those things: from a fascination with objects themselves, to a concern with objects' ages, to what they tell us about the lives of ancient peoples, to a recognition of their power and ethical treatment.

Who Was the First Archaeologist?

Many historians ascribe the honor of "first archaeologist" to Nabonidus (who died in 538 BC), the last king of the neo-Babylonian Empire (see "Looking Closer: AD/BC/BP . . . Archaeology's Alphabet Soup"). A pious man, Nabonidus's

artifact Any movable object that has been used, modified, or manufactured by humans; artifacts include stone, bone, and metal tools; beads and other ornaments; pottery; artwork; religious and sacred items.



Looking Closer

AD/BC/BP . . . ARCHAEOLOGY'S ALPHABET SOUP

Virtually everything written by archaeologists contains a blizzard of age-related acronyms. So let's clear the air with some concise definitions of the most common abbreviations:

- ▶ **BC** ("before Christ"): For instance, 3200 BC; note that the letters follow the date.
- ▶ **AD** ("anno Domini"): Meaning "in the year of the Lord," indicates a year that falls within the Christian era (that is, after the birth of Christ). Given the English translation of the phrase, archaeologists place the "AD" before the numerical age—we say the Norman

Invasion occurred in "AD 1066" rather than "1066 AD." The earliest AD date is AD 1; there is no AD 0 because this year is denoted by 0 BC and double numbering is not allowed.

- ▶ **CE** ("Common Era"): Basically the same as AD, except that it is intended to avoid religious connotations or privilege.
- ▶ **BCE** ("before Common Era"): The same as BC, but as with CE, it avoids the religious connotation.
- ▶ **BP** ("before present"): Many archaeologists feel more comfortable avoiding the AD/BC split altogether, substituting a single "before present" age estimate

(with AD 1950 as the zero point; we'll explain why in Chapter 6). But this convention is most comfortable in the absence of historical references. By this convention, an artifact from, say, the Hastings battlefield would be dated 884 BP (AD 1950 – AD 1066 = 884 BP); that's why many archaeologists working with historically documented events stick to the AD/BC, CE/BCE conventions. But given the broad time ranges employed in this text, we'll primarily use the BP system as often as the more colloquial "years ago."

zealous worship of his gods compelled him to rebuild the ruined temples of ancient Babylon and to search among their foundations for the inscriptions of earlier kings. We are indebted to the research of Nabonidus's scribes and the excavations by his subjects for much of our modern picture of the Babylonian Empire. Though nobody would call Nabonidus an "archaeologist" in the modern sense, he remains an important figure for one simple reason: *Nabonidus looked to the physical residues of antiquity—things—to answer questions about the past.* This may seem like a simple step, but it contrasted sharply with the beliefs of his contemporaries, who regarded tradition, legend, and myth as the only admissible clues to the past.

For archaeology to become an intellectual field, Western scholars first had to grasp the idea of "the past." Through the Middle Ages, Europeans recognized only a remote past, which they reified through myth and legend. This remote past was accessed largely through the Bible, as well as Roman and Greek texts. But during the Renaissance (circa AD 1300 to 1700), scholars such as Francesco Petrarch (1304–1374) saw a stark difference between the present and the past. Looking to antiquity for moral philosophy, Petrarch, the "father of humanism," perceived the remote past as an ideal of perfection. His study led to a rediscovery of the past by those in the western European intellectual tradition, and Petrarch and his contemporaries began to collect ancient texts and to make systematic observations on archaeological monuments.

It remained for the fifteenth-century Italian scholar Ciriaco de' Pizziccolli (1391–1455) to establish the modern discipline of

archaeology. Inspired while translating the Latin inscription on the triumphal arch of Trajan in Ancona (Italy), he devoted his life to studying ancient monuments. His travels took him into Syria and Egypt, throughout the islands of the Aegean, and to Athens. When asked his business, Ciriaco is said to have replied, "Restoring the dead to life"—which today remains a fair definition of the everyday business of archaeology.

Archaeology Can Be Controversial

But the study of the past is often controversial, and not everyone wants the dead to be restored.

Although Renaissance scholars looked to ancient texts to provide moral philosophy, others have used that same past to justify their actions in the present. For example, in 1572 Matthew Parker, Queen Elizabeth's archbishop of Canterbury, formed the Society (or College) of Antiquaries, devoted to the study of Anglo-Saxon law and writings. At the same time, Parliament upheld English Common Law, said to have been granted by William the Conqueror upon his conquest of England in 1066. English Common Law was based on the laws and customs of the Anglo-Saxons. British kings had persistently claimed that their authority to rule—the "divine right of kings"—originated in their descent from the legendary King Arthur (who, if there was such a person, lived about AD 500). King James asserted that Common Law did not apply to the Anglican Church or to the king because it originated with William rather than with Arthur. The Society of Antiquaries used ancient documents to demonstrate that William the Conqueror

did not actually create English Common Law—instead he had simply allowed it to stand and to be fused with his own ideas of justice. This was a problem for King James, for in English Common Law people had the right to rebel against an unlawful and unjust king. Seeing that meddling with this particular piece of the past could lead to riots in the streets, King James ordered the dissolution of the Society of Antiquaries in 1614.

But the die was cast, and the Society for Antiquaries (reformed in 1707) was only the first of many British scholarly associations interested in ancient history. Many private collectors were concerned only with filling their curio cabinets with *objets d'art*, but the result of British antiquarianism was to map, record, and preserve national treasures. By the late eighteenth century, members of Europe's leisure classes considered an interest in classical antiquities to be an important ingredient in the "cultivation of taste."

The Discovery of Deep Time

Archaeological research until the eighteenth century proceeded mostly within the tradition of Petrarch—that is, concerned primarily with clarifying the picture of classical civilizations of the Mediterranean. This lore was readily digested by eighteenth- and early nineteenth-century minds because nothing in it challenged the Bible as an authoritative account of the origin of the world and humanity.

But a problem arose when very crude stone tools like that shown in Figure 1-1 were discovered in England and continental Europe. About 1836 a French customs official and naturalist, Jacques Boucher de Crèvecœur de Perthes (1788–1868), found ancient ax heads in the gravels of the Somme River, associated with the bones of long-extinct mammals. To Boucher de Perthes (as he is more commonly known), the implication was obvious: "In spite of their imperfection, these rude stones prove the existence of [very ancient] man as surely as a whole Louvre would have done."

Few contemporaries believed him. Why? Some 200 years before Boucher de Perthes's discoveries, several scholars had figured the age of the earth as no more than about 6000 years. The most meticulous of these calculations were those of James Ussher (1581–1656), Archbishop of Armagh, Primate of All Ireland, and Vice Chancellor of Trinity College in Dublin. Using biblical genealogies and correlations of Mediterranean and Middle Eastern histories, Ussher concluded that Creation began at sunset on Saturday, October 22, 4004 BC. His effort was so convincing that the date 4004 BC appeared as a marginal note in most Bibles published after AD 1700. (The precision of his date sounds silly today, and although Ussher was wrong, he did follow very careful reasoning.)

This reckoning, of course, allowed no chance of an ancient human antiquity; there simply wasn't enough time.

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Figure 1-1 Boucher de Perthes found Paleolithic hand axes like this in the Somme River gravels.

Therefore, the thinking went, Boucher de Perthes must be mistaken—his rude implements must be something other than human handiwork. Some suggested that the “tools” were really meteorites; others said they were produced by lightning, elves, or fairies. One seventeenth-century scholar suggested that the chipped flints were “generated in the sky by a fulgurous exhalation conglobed in a cloud by the circumposed humour,” whatever that means.

But customs officials have never been known for their reserve, and Boucher de Perthes stuck to his guns. More finds were made in the French gravel pits at St. Acheul (near Abbeville), and similar discoveries turned up across the Channel in southern England. The issue was finally resolved when the respected British paleontologist Hugh Falconer visited Abbeville to examine the disputed evidence. A procession of esteemed scholars followed Falconer's lead and declared their support in 1859. The idea that humans had lived with now-extinct animals in the far distant past was finally enshrined in Charles Lyell's 1863 book *The Geological Evidences of the Antiquity of Man*.

The year 1859 was a banner year in the history of human thought: Not only was the remote antiquity of humankind accepted by the scientific establishment, but Charles Darwin also published his influential *On the Origin of Species*. Although Darwin mentioned humans only once in that book (on nearly the last page he wrote, “Much light will be thrown on the origin of man and his history”), he had suggested the process of natural selection, by which modern



Looking Closer

AMERICAN INDIAN OR NATIVE AMERICAN?

Some years ago, as Thomas was telling his son's third grade class what it's like to be an archaeologist, a small (but adamant) voice of protest came from the back of the room.

"How come you keep saying 'Indians'? Don't you know they want to be called 'Native Americans'?" a girl asked.

She had a good point. Many people are confused about these terms. In fact, our Native American colleagues tell us that people often correct them when they say "Indian," as if the term has become a dirty word.

Names are important because they are powerful; the people who name things are generally the people who control them. The word "Indian," of course, is a legacy from fifteenth-century European sailors, who mistakenly believed they'd landed in India. "Native American" arose among Indians in the 1960s and 1970s, during the civil rights movement. But many Indians point out the ambiguity in this term. Although your authors are not American Indians, both are native Americans (because we were born in the United States).

Most indigenous people of North America today simply accept the imprecision of today's terms and use American Indian, Canadian Native, First Nations, Native American (or Native Hawaiian), Indian, and native interchangeably; we follow this lead.

Of greater concern to most Indian people is the tribal name. Many Navajo people, for instance, wish to be known as Diné (a traditional name meaning "The People"). When discussing particular tribes, we attempt to use the term preferred by the tribe in question.

people could have arisen from ancient primate ancestors. In the beginning, though, Darwin's theory (which had to do with the transformation of species) was unconnected to the antiquity of humanity (which was a simple question of age). We'll come back to Darwin's contributions in Chapter 13.

The discovery of deep time—the recognition that life was far more ancient than recognized by biblical scholars and that human culture had evolved over time—opened the floodgates. British archaeology soon billowed out across two rather divergent courses. One direction became involved with the problems of remote geological time and the demonstration of long-term human evolution. The other continued the tradition of Petrarch and focused on classical studies, particularly the archaeology of ancient Greece and Rome, a field now known as **classical archaeology**. This philosophical split continues into modern times, although the two fields cross paths frequently today.

Archaeology and Native Americans

Across the Atlantic, American archaeology faced its own vexing issues of time and cultural development. How, nineteenth-century scholars wondered, could regions such as the Valley of Mexico and Peru have hosted the civilizations of the Aztecs and the Incas while people in many other places—such as the North American West—seemed impoverished, even primitive? When did people first arrive in the New World? Where had these migrants come from, and how did they get here?

Speculation arose immediately. One idea held that Native Americans were one of the Lost Tribes of Israel. Another suggested that Indians came from Atlantis. Others said they were voyaging Egyptians, Vikings, Chinese, or Phoenicians.

Gradually, investigators came to recognize considerable continuities between the unknown prehistoric past and the Native American population of the historic period. This accumulating knowledge underscored the profound differences between European and American archaeology. While Europeans wrestled with their ancient flints—without apparent modern correlates—American scholars saw that living Native Americans were relevant to the interpretation of archaeological remains. In the crass terms of the time, many Europeans saw Native Americans as "living fossils," relics of times long past.

New World archaeology thus became inextricably wed to the study of living Native American people. Whereas Old World archaeologists began from a baseline of geological time or classical antiquity, their American counterparts developed within an anthropological understanding of Native Americans. The study of American Indians became an important domain of Western scholarship in its own right, and North American archaeology became linked with anthropology through their mutual interest in Native American culture (see "Looking Closer: American Indian or Native American?").

classical archaeology The branch of archaeology that studies the "classical" civilizations of the Mediterranean, such as Greece and Rome, and the Near East.

We must stress an important point here: As Europeans refined the archaeology of Europe, they were studying their own ancestors (Anglo-Saxons, Celts, Slavs, Franks, and so forth). But New World archaeology involved Euro-Americans digging up Native Americans' ancestors. This has led to some fundamental issues in the ethical treatment of archaeological remains in the New World compared to Europe. We will return to some of these issues in later chapters.

A Brief History of Archaeology

The history of archaeology is illustrated here by a few individuals whose lives and careers typify archaeology of their time. These individuals were by no means the only ones practicing archaeology over the last 200 years. However, their stories demonstrate stages in the growth of archaeology and show how goals and perspectives have changed. At their heart, though, lies an abiding interest in ancient objects as the source of information about the past.

Giovanni Battista Belzoni: Circus Strongman—and Early Archaeologist

The earliest archaeologists are like the crazy uncle that no one wants to talk about. In fact, we don't call them archaeologists at all, but refer to them as **antiquarians**, people who were fascinated by ancient objects but who rarely used those objects to reconstruct the past.

Giovanni Battista Belzoni (1778–1823) was one of the earliest antiquarians. Though Figure 1-2 suggests Belzoni was a native of the Near East, he was actually born in Italy. The son of a barber, Belzoni came to archaeology by a circuitous route. He left home at 16 to join a monastic order and study hydraulics in Rome. But with Napoleon's entry into Italy, Belzoni found his opportunities curtailed and he left, eventually settling in England in 1802. More than six and a half feet tall, with a broad, powerful torso, his physique earned him employment as a circus strongman. Billed as the "Patagonian Sampson," he traveled England and Ireland lifting heavy weights, carrying a dozen men nightly around the stage, and, using his engineering knowledge, creating stage shows featuring jets of flame and water. In 1812, Belzoni



Figure 1-2 Giovanni Battista Belzoni, dressed here in Middle Eastern garb, was an antiquarian from Italy.

took his show on the road, leaving England to perform in Portugal, Spain, Sicily, and eventually the island of Malta.

In Malta he met an agent of Mohammed Ali Pasha, Egypt's ruler. Though Mohammed Ali was Albanian, he rose to power in Egypt after a British-Ottoman force defeated Napoleon's army and left a power vacuum that Ali, a member of the conquering force, managed to fill. He immediately set about industrializing Egypt, especially the production of cotton that British textile factories were eager to buy. To do so, he needed to irrigate Egypt's deserts, and to do that, he needed someone, the agent told Belzoni, who knew hydraulics. Tired of his career as a circus performer, Belzoni saw his chance. In 1815, he traveled to Egypt and, after a year, demonstrated an oxen-driven waterwheel to the pasha. Though it first worked splendidly, an unfortunate accident led the pasha to reject it and throw Belzoni out of the palace. Penniless, he was stuck in Egypt, with no prospects in sight.

But the past provided his future. Several European nations were looting Egypt of its antiquities to stock their museums, and the British consul in Egypt had promised associates at the British Museum that he would send antiquities for display. Many of these antiquities were huge statues, and the British consul saw how to put Belzoni's knowledge and strength to work. With Britain's financial backing, Belzoni soon became one of the best of the pillagers. His first task was to move the 8-ton head and torso of a statue of Ramesses II from Thebes. This effort required not only his great physical strength but also his engineering ingenuity, for the statue fragment had to be placed on a sledge and rolled, inch by inch, for two weeks to the Nile River, where it was loaded on a boat and floated north. It also required considerable negotiating skills, for Belzoni had to convince local leaders to provide him with the workmen needed for the effort. Sometimes this required bribery, and sometimes he simply picked up an obstinate tribal leader and "shook

antiquarian Originally, someone who studied antiquities (that is, ancient objects) largely for the sake of the objects themselves, not to understand the people or culture that produced them.



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Figure 1-3 Belzoni's crew moved the granite carving of Ramesses II using virtually the same techniques the ancient Egyptians had used. The hole in Ramesses right shoulder was drilled by the French when they tried, unsuccessfully, to move it.

him like a rat." The statue of Ramesses II is still on display at the British Museum.

In only three years, Belzoni "recovered" numerous statues, mummies, and carvings. He was the first European to enter the temple at Abu Simbel (see the chapter's opening photo), and the first European to enter the pyramids on the Giza Plateau outside Cairo. He removed the 6-ton granite obelisk from Philae, and discovered five tombs in the Valley of the Kings (where 100 years later the tomb of King Tutankhamun would be found). Belzoni's spoils, in fact, inspired Shelley's famous 1818 poem "Ozymandias."

Looters vied for the spoils. Belzoni had gun battles with the French and he soon tired of the fighting. In 1819 he returned to England, where he received considerable acclaim for his accomplishments (and booty). An inveterate wanderer, he left again in 1823 to seek the origin of the Nile, but was felled by dysentery, and died in Benin.

Why do we remember Belzoni, and not his rivals, in what is now known as "the rape of the Nile"? Belzoni's methods were destructive enough to make modern archaeologists cringe. Once, crawling nearly naked through a mummy-filled cave, Belzoni tried to sit, but "when my weight bore on the body of an Egyptian, it crushed it like a band-box. . . . I sank altogether among the broken mummies, with a crash of bones, rags, and wooden cases." Valuable information was lost by such carelessness. And no archaeologist today would so thoughtlessly remove another country's cultural heritage. But Belzoni stands out because he took notes and made illustrations and observations of the places he visited. To be sure, the antiquities were first on his mind, but he, and some other antiquarians, were also interested in what those things

had to tell us. There was no professional archaeology at the time; there were no excavation manuals, no national laws protecting antiquities, and no idea that crucial knowledge was being lost. Nonetheless, it was from such humble (and humiliating) beginnings that the science of archaeology arose.

Jens Jacob Asmussen Worsaae: The First Professional Archaeologist

Many of the early antiquarians felt no shame in trashing ordinary mummies or less spectacular sites because they knew little of the potential for ancient objects to tell us something about the past. These men thought they already knew the past, or they

simply didn't care. They thought *about* things, but they didn't think *from* things. This began to change in the mid-nineteenth century.

With hindsight, we can see that the antiquarians' role in the development of archaeology was to create collections of objects from which patterns eventually emerged, patterns that suggested ancient cultures were not static, but had changed over time. Trying to get a handle on the chronology of these changes, then, was the first order of business, and this is what the world's first professional archaeologist set out to do.

Jens J. A. Worsaae (1821–1885; Figure 1-4) was a toddler when Belzoni passed away. Born in Denmark, he was fascinated as a child by artifacts and even dug into a few



© Courtesy National Museum of Denmark

Figure 1-4 Jens Jacob Asmussen Worsaae, the first professional archaeologist.

mounds and barrows. Worsaae intended to study law, but before he was 20 he volunteered for Christian Thomsen (1788–1865), who was organizing the archaeological collections at what is now the National Museum of Denmark (Thomsen had devised the now well-known typological scheme of the Stone, Bronze, and Iron Ages). Thus, Worsaae was the first person to receive training, albeit informal, in archaeology. Through connections, Worsaae received financial support from the king of Denmark to write his first book, *Primeval Antiquities of Denmark*, published in 1843, when he was only 22. Later he was appointed Denmark's first Inspector for the Conservation of Antiquarian Monuments and, at age 34, became the first professor of archaeology at the University of Copenhagen.

We recognize Worsaae as the first archaeologist because, unlike antiquarians who excavated to find things, Worsaae *excavated to answer questions*. Because he was interested in what artifacts tell us about the lives of ancient people, Worsaae was clearly *thinking from things*. Moreover, he was not content with studying artifacts found by farmers or pillagers. He argued that “antiquities have a value with reference to the spot in which they are found” and that it was “necessary to examine and compare with care the places in which antiquities are usually found.” In other words, he knew that an artifact's archaeological *context* was as important as the artifact itself. We'll return to the idea of context in Chapter 4.

Here's an example. Large piles of shells once lay all along the Danish shore, and during the mid-nineteenth century, some geologists argued these piles were created by wave action. But Worsaae's excavations demonstrated that these were **middens**, trash heaps created by people. In one of his notebooks he wrote that the “heaps were the places where the people of the neighborhood, in that far-off time, took their meals, as witness, for example, the **potsherds**, charcoal, bones of animals and stone implements.” He also excavated sites to test Thomsen's Three-Age system, showing that the Stone, Bronze, and Iron Ages were real chronological phases, as Thomsen had hypothesized. In sum, Worsaae demonstrated two important attributes of an archaeologist:

midden Refuse deposit resulting from human activities, generally consisting of sediment; food remains such as charred seeds, animal bone, and shell; and discarded artifacts.

potsherd Fragment of pottery.



Figure 1-5 Alfred V. Kidder (right), conducting a survey with Jesse Nusbaum at Mesa Verde, Colorado, in 1907.

© Faith Kidder Fuller

He excavated to answer questions, not just to find things; and he knew that an artifact's context was as important as the artifact itself.

Alfred Vincent Kidder: Founder of Anthropological Archaeology

Professional archaeology developed a bit later across the Atlantic, and one of its early figures was Alfred Vincent Kidder (1885–1963), shown in Figure 1-5. Kidder was born in Michigan, and his father, a mining engineer, made sure that his son received the best education available. First enrolled in a private school in Cambridge, Massachusetts, Kidder then attended the prestigious La Villa in Ouchy, Switzerland, and then registered at Harvard. Kidder joined an archaeological expedition to northeastern Arizona, exploring territory then largely unknown to the Anglo world. The southwestern adventure sealed his fate.

When Kidder returned to Harvard, he enrolled in the anthropology program and in 1914 was awarded the sixth American PhD specializing in archaeology—and the first with a focus on North America. Kidder's dissertation examined prehistoric southwestern ceramics, assessing their value in reconstructing culture history. Relying on scientific procedures, Kidder demonstrated ways of deciphering meaning from one of archaeology's most ubiquitous items, the potsherd. Urging accurate description of ceramic decoration, he explained how such apparent minutiae could help determine cultural relationships among various prehistoric groups. Kidder argued that only through controlled excavation and analysis could researchers draw inferences about such anthropological

subjects as acculturation, social organizations, and prehistoric religious customs.

In 1915, the Department of Archaeology at the Phillips Academy in Andover, Massachusetts, sought a site of sufficient merit to justify a multiyear archaeological project. Because of his anthropological training, Kidder was selected to direct the excavations. He evaluated the possibilities and decided on Pecos Pueblo, a massive prehistoric and historic period ruin located southeast of Santa Fe, New Mexico. Kidder was impressed by the great diversity of potsherds scattered about the ruins and felt certain that Pecos contained enough stratified debris to span several centuries. He dug at Pecos for ten summers.

The Pecos excavations were consequential for several reasons. Kidder followed and separated particular strata, distinctive layers of earth, to construct a cultural chronology. He also went beyond the pottery to make sense of the artifact and architectural styles preserved at Pecos. His intensive artifact analysis, done before the advent of radiocarbon dating or tree-ring chronology (methods that we discuss in Chapter 6), established the framework of southwestern prehistory, which largely remains intact today.

After joining the Carnegie Institution of Washington, DC, as director of the Division of Historical Research, Kidder launched an ambitious archaeological program to probe the Maya ruins of Central America. He directed the Carnegie's Maya campaigns for two decades, arguing that a true understanding of Maya culture would require a broad plan of action with many interrelated areas of research. Relegating himself to the role of administrator, Kidder amassed a staff of qualified scientists with the broadest possible scope of interests. His plan was a sea change in archaeological research, enlarging traditional archaeological objectives to embrace the wider realms of anthropology and allied disciplines. Under Kidder's direction, the Carnegie program supported research by ethnographers, botanists, geographers, physical anthropologists, geologists, meteorologists, and, of course, archaeologists. With help from the early aviator Charles Lindbergh, Kidder even employed aerial reconnaissance to discover new ruins and map the boundaries of various types of vegetation. Today the interdisciplinary complexion of archaeology is a fact of life, but when Kidder proposed the concept in the 1920s, it was revolutionary.

Through his research in the Maya region and in the American Southwest, Kidder helped shift archaeology toward more anthropological purposes. Kidder maintained that archaeology should be viewed as "that branch of anthropology which deals with prehistoric peoples," and that archaeologists were merely a "mouldier variety of anthropologist." Although archaeologists continue to immerse themselves in the nuances of potsherd detail and architectural specifics, the ultimate objective of archaeology is to move from *things* to *people*.



© Courtesy The Principal and Fellows, Newnham College, Cambridge

Figure 1-6 Gertrude Caton-Thompson, one of the pioneers of modern excavation in Egypt.

Gertrude Caton-Thompson: Looking Beyond Tombs

Born in England to a wealthy family, Gertrude Caton-Thompson (1888–1985; Figure 1-6) had the physical and intellectual grit required in archaeology. Several trips to Egypt, Greece, Palestine, and Malta as a youth generated a deep interest in prehistory, but initially she led the carefree existence typical of the wealthy around the turn of the century. But she had a serious side. In 1911 she was active in the women's suffrage movement, and during World War I she volunteered for various offices. In that capacity she attended the Paris peace talks in 1919 as a personal assistant. There she met T. E. Lawrence ("Lawrence of Arabia"), who had done some archaeology, as well as Gertrude Bell, an archaeologist and student of Arabia (she helped found the Baghdad Museum and create the modern national borders of Iraq). Her encounter with Lawrence and Bell encouraged Caton-Thompson to return to her childhood passion, and she began studying archaeology formally in 1921. Recognizing, like Kidder, that archaeology requires a knowledge of many fields, she studied geology, zoology, paleontology, Arabic, and, of course, anthropology.

A quick learner, she soon found herself in Egypt working with Sir Flinders Petrie, an important figure in archaeology. Working in remote parts of Egypt or other parts of Africa was and still is difficult, but Caton-Thompson was up to the task. On one trip, she slept in an empty stone tomb, with a revolver under her pillow for protection against hyenas and cobras. On another, she hiked across the desert one night to find help for a crew that was running out of water. And in southern Africa, she mapped a site while keeping an eye on a leopard nearby on the edge of a cliff.

More important, she advanced archaeology intellectually. At the time, most archaeologists in Egypt focused their attention on tombs and temples, but Caton-Thompson



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Figure 1-7 Great Zimbabwe, a medieval-age ruin in Zimbabwe, Africa. Caton-Thompson disproved hypotheses that it was built by European or Asian peoples.

thought they were missing something by not excavating settlements. In the 1920s, she became the first archaeologist to excavate a village site in Egypt, using the same careful methods that she had learned under Petrie. A few years later she undertook a survey of the northern Faiyum Desert in Egypt. Like Kidder, Caton-Thompson broke new ground by working with a geologist to reconstruct the sequence of settlements and their relationships to ancient lake levels preserved in sediments and landforms.

Caton-Thompson continued to work in Egypt and elsewhere, but her work in Zimbabwe (then Southern Rhodesia) shows an important element of modern archaeology. For decades, the colonial powers had known of the massive ruins of a site known as Great Zimbabwe (from which the modern nation took its name after independence). Sitting atop a hill, the site contains massive stone walls and buildings (Figure 1-7). Several investigators (whose methods were those of the worst of the antiquarians) argued that the site was Ophir (the location of the biblical King Solomon's mines) or the palace of the Queen of Sheba. None wanted to believe that indigenous African people were capable of creating such a structure. Some asserted the Phoenicians had built the site, and used its alleged biblical connections to justify European colonization and control of southern Africa.

stratigraphy A site's physical structure produced by the deposition of geological and/or cultural sediments into layers, or strata.

In 1929, the British government invited Caton-Thompson to resolve the controversy. Reasoning that previous efforts failed because they had ignored the site's **stratigraphy** (we'll discuss this concept in Chapter 5), she approached the problem with two straightforward questions: How old is the site, and was it built by Africans? Caton-Thompson carefully excavated deep trenches to bedrock in several places, and even tunneled under the site's massive solid stone conical tower. Studying glass trade beads, she eventually demonstrated that the site had been inhabited in the thirteenth and fourteenth centuries—far too late for its alleged biblical associations. She also found that the pottery and other implements, as well as the architecture, were little different from those of later known African peoples. By thinking from things, Caton-Thompson concluded that Great

Zimbabwe was African in origin. She took considerable flak for this conclusion because it did not support colonial rule of southern Africa. The past is often used to justify the present—and archaeologists are often called upon to judge these claims. This is one of the realities of archaeology that we will touch upon in later chapters.

Archaeology at Mid-Twentieth Century

Archaeology began as a pastime of the rich, but developed into a professional scientific discipline. Most professional archaeologists were affiliated with major museums and universities; others joined the private sector, working to protect and conserve America's cultural heritage. This institutional support not only encouraged a sense of professionalism and fostered public funding, but also mandated that public repositories care for the archaeological artifacts recovered. Twentieth-century archaeologists were not collectors of personal treasure: All finds belonged in the public domain, available for exhibit and study.

We can also see a distinct progression toward specialization in our target archaeologists. Scholars accumulated knowledge of the past so rapidly that by the early twentieth century, archaeologists specialized in particular regions. It is difficult today to find someone like Caton-Thompson doing seminal work in Egypt while simultaneously tackling challenging issues in southern Africa. Possibly the greatest change, however, has been the quality of archaeologists' training. Worsaae was more or less self-taught, but Kidder and Caton-Thompson received more formal training, much of it hands-on. American archaeologists were also well

versed in the broader field of anthropology, although this was less true for European archaeologists.

Archaeologists by mid-century wanted to transcend mere cultural chronology, but classifying artifacts and sorting out their patterns in space and time left little time for more anthropological objectives, such as reconstructing society. Most archaeologists by the middle of the twentieth century practiced what is called **culture history**, documenting how material culture changed over time and space. Their main goal was to track the migrations and development of particular prehistoric cultures. Some archaeologists tried to explain changes by relating them to climatic change, for example, or to vague ideas about cultural evolution. But for the most part, archaeologists attributed differences in artifact frequencies between sites to the presence of different cultures or ideas. Changes in artifact frequencies over time, such as the types of pottery found in different layers of earth at a site, were attributed to the diffusion of ideas from other cultures or the replacement of one culture by another. Worsaae, for example, thought that the Stone, Bronze, and Iron Ages marked the diffusion of new ideas or the migration of new people into Denmark, rather than a technological evolutionary sequence.

By the 1950s, the basic prehistory of many world regions was sufficiently well understood that some archaeologists could move beyond simple documentation to more in-depth reconstructions of prehistory. Worsaae wanted to paint a picture of life alongside the growing shell middens of Denmark. Caton-Thompson excavated village sites because she knew that she could not draw a complete picture of life in ancient Egypt by excavating tombs alone. But only later, as methods and basic cultural chronologies developed, could archaeologists move on to more anthropological goals and seek explanations for the prehistory they were reconstructing.

H. Marie Wormington: *Ancient Man in North America*

Born in Denver, Colorado, H. Marie Wormington (1914–1994; Figure 1-8) was part of the generation that began to take archaeology further. Like many archaeologists before her, she had originally intended to pursue another career—zoology or medicine, in her case. But while taking an archaeology class at the University of Denver, she discovered her passion. “Once I discovered there was such a thing as archaeology,” she later said, “I just never looked back.” Wormington continued her education in France, working on a cave excavation in the Dordogne in 1935, then joined the staff at what is now the Denver Museum of Nature and Science. She left temporarily to obtain her doctorate from Radcliffe, but remained employed at the museum until 1968, when she left to occupy several teaching positions. She was among the first American anthropologists to enter the former Soviet Union, as well as the People’s Republic of China.



© Denver Museum of Nature and Science

Figure 1-8 Marie Wormington, a female pioneer in American archaeology.

This vignette exposes some of archaeology’s dirty laundry. The many women involved in the earliest days of archaeology faced a difficult time and hard decisions because women were often considered unsuited for the rigors of archaeology. Some, such as Caton-Thompson, sacrificed marriage and family. Marie Wormington once had to sit in a Harvard corridor because, as a woman, she was prohibited from entering the lecture hall. She signed her work “H. M. Wormington,” concealing her gender because the director of the Denver museum feared that no one would read a book on archaeology by a woman. Into the late 1960s, many male archaeologists refused to take women on their field crews.

Times have changed—fully half of the several thousand archaeologists in the United States today are female—but in the 1930s, women like Marie Wormington were in the vanguard. She was only the second woman admitted to study in Harvard’s anthropology department, and was the first female president of the Society for American Archaeology. Though remembered as eminently polite and diplomatic, she was no shrinking violet: She once told the dangerous Nicaraguan dictator Anastasio Somoza Debayle that a site in Nicaragua was not as old as he hoped.

Wormington worked in many places and on various research topics, but her first love was “paleoindian” archaeology—the archaeology of pre-8000-year-old North America. In 1939, at the age of 25, she published *Ancient Man in North America*,

culture history The kind of archaeology practiced mainly in the early to mid-twentieth century; it “explains” differences or changes over time in artifact frequencies by positing the diffusion of ideas between neighboring cultures or the migration of a people who had different mental templates for artifact styles.

which went through four editions, the last published in 1957. These editions demonstrate how archaeology matured over time. In 1939, the American scientific community was only able to estimate how long people had lived in the New World; by 1957, radiocarbon dating gave certainty to those estimates. The last edition contains discussions of genetic data (blood typing), geology, skeletal data, and comparisons to archaeological material in South America and Siberia. Importantly, Wormington wrote *Ancient Man* (as well as *Prehistoric Indians of the Southwest*, 1947) for the general public, anticipating the present-day concern that the results of archaeology be accessible to the public that supports the field.

The various editions of *Ancient Man* chronicle not only the astonishing growth in the amount of information available, but also the progress in interpreting archaeological data in terms of technology, subsistence, migratory routes, and age. The book evolved from a straightforward catalog of sites and finds to a discussion of what those finds *mean* in terms of the lives of the ancient people who left them behind. That is, the various editions of *Ancient Man* demonstrate the shift from a concern with *things* to a concern with *thinking from things*. “Artifacts themselves are not important,” Wormington once said, “it’s the information they can provide about cultures and about people.” She closed *Ancient Man in North America* with a clear statement of why modern archaeology abandoned the misguided confidence of the antiquarians in favor of a more rigorous concern for methods and techniques:

To the casual observer the growing list of unanswered questions regarding the ancient inhabitants of North America may seem appalling; actually it should be regarded as encouraging. With a new subject the tendency is to oversimplify through lack of knowledge. Only with increased knowledge comes the realization of the complexity of the problem, for with each solution which is reached new fields are opened and new perplexities arise. To find an answer one must first have sufficient knowledge to formulate the question.

As the knowledge of prehistory accumulated, the methods and objectives of archaeology changed, as demonstrated by archaeologists who were trained in the 1960s.

Lewis R. Binford: Archaeology’s Angry Young Man

If archaeology has ever had an “angry young man,” it was Lewis R. Binford (1931–2011; Figure 1-9). After a period of

new archaeology An approach to archaeology that arose in the 1960s, emphasizing the understanding of underlying cultural processes and the use of the scientific method; today’s version of the “new archaeology” is sometimes called processual archaeology.



Figure 1-9 Lewis R. Binford (right) at Tulugak Lake in Alaska in 1999 with a Nunamiut friend, Johnny Rulland. Binford helped develop the “new archaeology” of the 1960s.

military service, Binford enrolled in 1954 at the University of North Carolina, wanting to become an ethnographer. But when he entered the graduate program at the University of Michigan, Binford had become a confirmed archaeologist.

The 1960s were a watershed time for American college campuses. Baby-boom demographics and the GI Bill inflated enrollments. Campuses became the focal point for the waves of social and political confrontation that roiled the nation. Clashes over the war in Vietnam and civil rights created a revolutionary atmosphere. Archaeology was firmly embedded in this intellectual climate. Everyone, including archaeologists, braced for the change.

Binford thrived in this cultural climate. He could lecture, sometimes for hours, with the force and enthusiasm of an old-time southern preacher, and he rapidly assumed the role of archaeological messiah. His students became disciples spreading the word: As the study of cultural change, archaeology has obvious relevance to modern problems. To fulfill this role, Binford argued, archaeology must transcend potsherds and spear points to address larger issues, such as cultural evolution, ecology, and social organization. Archaeology must take full advantage of modern technology by using scientific methods and sophisticated, quantitative techniques. Archaeology must study the remaining preindustrial peoples to scrutinize firsthand the operation of disappearing cultural adaptations. And archaeology must be concerned with methods for reconstructing the past. In the 1960s, this became known as the **new archaeology** (see “In His Own Words: The Challenge of Archaeology” by Lewis R. Binford). Archaeology had, in Marie Wormington’s words, sufficient knowledge to start asking more complex and difficult questions.

The new archaeology (a now-antiquated term for us all, and especially to today’s students) emphasized a new way of studying the past and a new agenda for doing archaeology. The master plan was set forth in a series of articles published through the 1960s and early 1970s, many by Binford and his students.



In His Own Words

THE CHALLENGE OF ARCHAEOLOGY

— by Lewis R. Binford

As I was riding on the bus not long ago, an elderly gentleman asked me what I did. I told him I was an archaeologist. He replied: “That must be wonderful, for the only thing you have to be to succeed is lucky.” It took some time to convince him that his view of archaeology was not quite mine. He had the idea that the archaeologist “digs up the past,” that the successful archaeologist is one who discovers something not seen before, that all archaeologists spend their lives running about trying to make discoveries of this kind. This is a conception of science perhaps appropriate to

the nineteenth century, but, at least in the terms in which I myself view archaeology, it does not describe the nature of archaeology as it is practiced today. I believe archaeologists are more than simply discoverers. . . .

Archaeology cannot grow without striking a balance between theoretical and practical concerns. Archaeologists need to be continuously self-critical; that is why the field is such a lively one and why archaeologists are forever arguing among themselves about who is right on certain issues. Self-criticism leads to change, but is itself a challenge—one

which archaeology perhaps shares only with palaeontology and a few other fields whose ultimate concern is making inferences about the past on the basis of contemporary things. So archaeology is not a field that can study the past directly, nor can it be one that merely involves discovery, as the man on the bus suggested. On the contrary, it is a field wholly dependent upon inference to the past from things found in the contemporary world. Archaeological data, unfortunately, do not carry self-evident meanings. How much easier our work would be if they did!

Binford asked why archaeology had contributed so little to general anthropological theory. His answer was that, in past studies, material culture had been simplistically interpreted. Too much attention had been lavished on artifacts as passive traits that “blend,” “influence,” or “stimulate” one another. Binford proposed that artifacts be examined in their cultural contexts and interpreted as reflections of technology, society, and belief systems. That is, Binford underscored the need to change from thinking *about* things to thinking *from* things.

Binford also emphasized the importance of precise, unambiguous scientific methods. Archaeologists, he argued, must stop waiting for artifacts to speak up. They must formulate hypotheses and test these on the remains of the past. Binford argued that, because archaeologists always work from samples, they should acquire data that make the samples amenable to statistical analysis. He urged archaeologists to stretch their horizons beyond the individual site to the scale of the region; in this way, an entire cultural system could be reconstructed (as we discuss in Chapter 3). Such regional samples must be generated from research designs based on the principles of probability sampling. Random sampling is commonplace in other social sciences, and Binford insisted that archaeologists apply these scientific procedures to their own research problems.

Binford’s ideas about methodology fostered projects designed to demonstrate how this approach can help comprehend cultural processes. Intricate statistical techniques were applied to a variety of subjects, from the nature of Mousterian

(some 150,000 years old) stone tools to the archaeology of historic forts. He proposed new ideas, rooted in the field of human ecology, to explain the origins of plant domestication. These investigations were critical because they embroiled Binford in factual, substantive debate. Not only did he advocate different goals and new methods, but Binford also gained credibility among field archaeologists because he was arguing about specifics, not just theory. Binford conducted his own ethnographic fieldwork among the Nunamiut Eskimo, the Navajo, and the Australian Aborigines, testing the utility of archaeological concepts and methods on the trash of living peoples.

The “new archaeology” of the 1960s has today evolved into so-called processual archaeology. In subsequent chapters, we explore the tenets of this position and also examine how yet another wave of archaeological criticism—postprocessual archaeology—finds fault with Binford’s approach and suggests some alternative directions.

Archaeology in the Twenty-First Century

So, what about today? Who is a mover and shaker of the twenty-first century?

Perhaps in another 50 years or so, hindsight will suggest one person who truly captures the spirit of these times. But right now, we do not detect a single, defining trend that

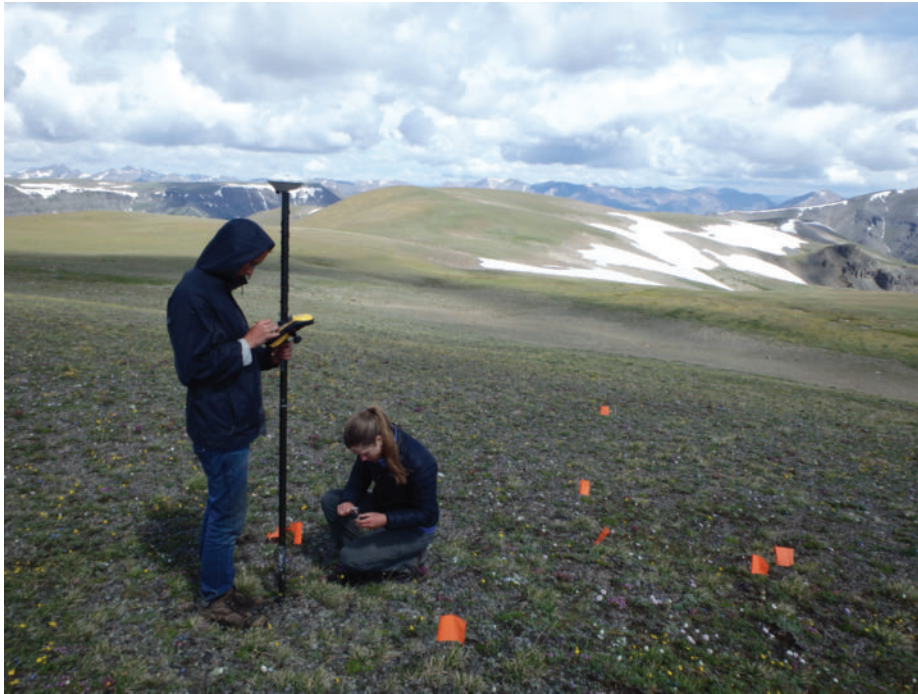


Figure 1-10 Archaeology students Matthew Neff (standing) and Rachel Reckin recording artifacts with a Trimble GPS at 11,400 feet in the mountains of Wyoming.

“publish or perish” aptly describes life for a professor in a research university.

Archaeologists employed as curators in museums are responsible for research, maintaining exhibits and constructing new ones, and public outreach. How much they do of each is again a product of the institution’s mission: Curators in large museums tend to do more research, while those in small museums work more on exhibits and outreach.

In both of these cases, archaeologists’ research is what they decide it to be. Both of your textbook’s authors are required by their institutions to do research, but neither institution tells us what to research. We can switch, depending on where our research leads us, from lowland caves to high-altitude sites (Figure 1-10).

dominates archaeology; instead, the discipline has several branches, each growing and intersecting with the others in interesting ways. Throughout these pages, we will meet some archaeologists who exemplify those trends (in boxes labeled “Profile of an Archaeologist”). For now, we want to give you a sense of the diversity of modern archaeology.

The Jobs of Modern Archaeology

All archaeologists today are concerned with learning something new about the past, with communicating that knowledge to the public, and with protecting archaeological sites. But archaeologists serve in various specific jobs that usually emphasize one or two of these concerns. Prior to the 1960s, virtually all archaeologists made a living by working in a museum or university. Many, including this textbook’s authors, still work in such places, but today federal agencies and especially private cultural resource management (CRM) firms employ the majority of archaeologists.

University-based archaeologists are responsible for both teaching and research. How much they do of each depends on their educational institution. Those in community colleges do much more teaching than research, while those in large, “research universities” teach fewer classes and devote more time to research. Doing archaeological research means spending time in excavation or analysis, as well as in writing grant proposals to secure funding to pay for research as well as publications describing the research. The expression

Archaeologists working for federal, state, or local governments or for a private archaeological consulting (CRM) firm have different responsibilities. Their role is to make sure that companies and the federal government are in compliance with federal laws, regulations, and statutes. Government archaeologists are not required to do research (though many do); instead, they oversee the protection of archaeological properties on federal land, do some public outreach, and track archaeological sites through databases (e.g., Wyoming’s state archaeological database contains more than 130,000 sites even though only a fraction of the state has been surveyed for sites). CRM firms arose in response to federal legislation passed in the 1960s designed to protect the nation’s archaeological resources (more about these laws in Chapter 15). Archaeologists in such firms work on the sites that lie in the paths of coal mines, roads, pipelines, well pads, and wind towers. As such, they don’t have much choice over what sites they excavate and study. They do, however, have to be aware of current research to justify which sites are excavated and which are to be let go (we’ll return to this in Chapter 15 when we consider the concept of “significance”). Although they are not required to conduct that research, many CRM archaeologists do so anyway. But because their primary obligation is to ensure compliance with laws, their first job is to conduct fieldwork and analysis to the highest standard possible using the latest techniques and methods. Each of these occupations, different as they might be in day-to-day practice, blend together because the goal of all archaeology is to reconstruct and understand

the past. CRM and federal archaeology, for instance, generate enormous amounts of data that university and museum archaeologists can use in their research. Each member plays a role in making the results of archaeology relevant to the public.

Despite the multiple ways that archaeologists can make a living, we all share a broad set of theories, approaches, and interests. This is partly due to increased diversity of the field's membership. Before the 1970s, most American archaeologists were white and male; today the archaeological profession comprises equal numbers of men and women, and more minorities, including Native Americans, are actively involved in the field. And the sheer number of archaeologists has increased dramatically over the past few decades. In the 1960s, you could put all the archaeologists in the country in a modest-sized university classroom. Today, there are more than 7000 professional archaeologists working in the United States alone.

If you flip through the pages of a professional journal such as *American Antiquity*, you'll find articles on everything from 13,000-year-old stone tools to tin cans found in the trash dump of a historic cabin. You'll find articles that make use of complex mathematical models, statistical techniques, and stable isotope and protein residue analysis (more on those in later chapters), but you'll also find humanistic efforts that connect the past to living, descendant communities and reconstruct ancient cosmologies from carvings and paintings. Some archaeologists today focus less on excavation, and more on compiling existing information into large databases. Others have hung up their trowels, and conduct research with living communities to develop ways to link human behavior with material remains. Some focus on public outreach; others on statistical techniques. Some specialize in the study of a particular class of material things—stone tools, pottery, metallurgy, animal bones, or sediments. Some are regional specialists, and some are experts in the application of a particular piece of technology, such as ground-penetrating radar (more on that in Chapter 3).

The point is simple: Archaeologists make a living in multiple ways. If you are interested in working toward a career in archaeology, you'll find a place for you and your particular interests.

Conclusion: Archaeology's Future

Archaeology's future is a lively and vibrant one. Archaeology enjoys enormous public interest, as shown by the popularity of places such as Mesa Verde National Park, expanding television programming, and popular college courses. This level

of public support suggests that more, not less, archaeology will be needed in the future.

Archaeology evolved from a pastime of the wealthy to an established scientific discipline. But with these changes has come the realization that studying the human past raises numerous ethical issues. Nobody can practice archaeology in a political or cultural vacuum. We argue that archaeology remains a science that insists on high standards of evidence and must continue to examine how we make inferences from evidence. Science in this sense is self-correcting, making it essential to most inquiry (including archaeology). But we also recognize that scientific inquiry is susceptible to cultural biases. We think that archaeologists must continue to work closely with indigenous peoples and descendant communities, attempting to recognize and correct cultural biases (as in Figure 1-11, which shows a working example of this compromise). We'll return to this matter in our final chapter.



Figure 1-11 Archaeology today confronts both scientific and ethical challenges. Yet there are many signs that archaeology need not be antagonistic to indigenous peoples. Here, Bryceson Pinnecoose (Hopi/Cheyenne, on right) and Ron Winters use a power sifter to screen archaeological deposits at Mission San Marcos, New Mexico.

S U M M A R Y

1. What makes an archaeologist an archaeologist?

- ◆ Archaeologists reconstruct and explain the past by “thinking from things,” using their analyses of material remains as the basis for knowledge of the past.

2. Why is the study of the past controversial?

- ◆ People typically use their vision of the past to justify their actions in the present. The assumption that Great Zimbabwe was built by Europeans justified Europeans’ taking southern Africa. Archaeologists can (and should) question any beliefs about the past.
- ◆ New World prehistory is largely studied by people of European descent, setting up inevitable and important disagreements about the past and its use in the present.

3. How was the rise of archaeology connected to the discovery of humanity’s “deep” antiquity?

- ◆ Studying the past depends on *recognizing* a past.
- ◆ Although many early scholars were aware of the classical civilizations, the discovery in France of human artifacts with extinct animals made evident the need to study that past in great detail, without ancient documents as a guide.

4. Who were the antiquarians, and why include them in a history of archaeology?

- ◆ For better or worse, these looters helped spark an interest in the ancient world. They built museum

collections that inspired later generations to create the profession of archaeology (which would reject the methods and attitudes of antiquarians).

5. What trends have characterized archaeology over the last century?

- ◆ The evolution from antiquarianism to professional archaeology has involved the movement from thinking *about* things to thinking *from* things.
- ◆ Archaeologists have always sought to build cultural chronologies, reconstruct ancient societies, and explain why cultures change over time. Today we can see they were initially successful with the first objective, then the second, and eventually the third. Along the way, archaeologists have increasingly borrowed information and techniques from many fields—geology, zoology, mathematical statistics, astronomy, climatology, and others—as they develop ways of making solid inferences from material remains using solid scientific methods.
- ◆ Archaeology today covers both prehistoric and historical eras and uses a wide diversity of approaches. Archaeology is concerned with bringing knowledge to a broader public, with making research relevant to contemporary society, and with understanding the opinions and needs of indigenous and descendant communities.



Structure 12 at the Ness of Brodgar, a Neolithic site on Scotland's Orkney Islands.

The Structure of Archaeological Inquiry

LEARNING OBJECTIVES

AFTER READING THIS CHAPTER, YOU SHOULD BE ABLE TO ANSWER THESE QUESTIONS:

1. What is an anthropological approach?
2. What two paradigms do anthropologists use to study culture, and how are these different ways of thinking reflected in archaeology?
3. What is science and how does it explain things?
4. What three levels of theory does a scientific approach in archaeology entail? How do these relate to paradigms?

PREVIEW



In this chapter we consider how archaeologists relate to the broader field of anthropology and how archaeologists go about trying to reconstruct the past. The concept of culture is crucial to anthropology, and archaeologists study it in different ways. We'll also see how scientific approaches work in archaeology.

Although archaeologists use theories at all levels of their research, we are especially concerned with the concept of *paradigms*, the overarching frameworks of theory used to help us understand the human condition. Finally, we'll examine the cyclical structure of archaeological inquiry.

Introduction

More than 50 years ago, archaeologist Philip Phillips (1900–1994) famously declared that “Archaeology is anthropology or it is nothing.” Especially within the United States, this remains true, with archaeology a distinct subfield of anthropology. Although both of us are archaeologists, our degrees are all in anthropology, and we both work in departments of anthropology. In fact, there are few U.S. departments of archaeology (the most prominent is at Boston University). Outside the United States, however, archaeology is often in its own department, or aligned with the humanities, such as history, classics, or art history (and it sometimes appears in these departments at U.S. universities). The boundaries between these various archaeologies and these former alliances are crumbling, and in this book we focus on an archaeology that is closely aligned with an anthropological approach.

What's an Anthropological Approach?

Everyone knows what anthropologists do: They study native people and fossils and chimpanzees. They grin from the pages of *National Geographic* magazine and show up

anthropology The study of all aspects of humankind—biological, cultural, and linguistic; extant and extinct—employing a holistic, comparative approach and the concept of culture.

biological anthropology A subdiscipline of anthropology that views humans as biological organisms; also known as physical anthropology.

cultural anthropology A subdiscipline of anthropology that emphasizes nonbiological aspects: the learned social, linguistic, technological, and familial behaviors of humans.

linguistic anthropology A subdiscipline of anthropology that focuses on human language: its diversity in grammar, syntax, and lexicon; its historical development; and its relation to a culture's perception of the world.

on the Discovery Channel. But few people know everything that anthropologists actually do, or even what makes them anthropologists at all. **Anthropology** is tough to pin down because anthropologists do so many different things.

So, what makes an anthropologist an anthropologist? The answer is surprisingly simple: All anthropologists believe that the best understanding of the human condition arises from a global, comparative, and holistic approach. It's not enough to look at a single group of Americans, Chinese, or Bushmen to find the keys to human existence. Neither is it enough to look at just one part of the human condition, as do economists, historians, political scientists, and psychologists. Because looking at part of the picture gives you just that—only part of the picture.

What holds anthropology together is its insistence that every aspect of every human society, extant or extinct, counts. This broad-based approach qualifies anthropology as uniquely capable of understanding what makes humankind distinct from the rest of the animal world. This isn't to say that all anthropologists study everything. Renaissance anthropologists—individuals who do everything—have faded into folklore. Today, none of us can hope to do everything well.

So, anthropologists specialize. Archaeologists are anthropologists who specialize in ancient societies. But archaeologists still draw upon each of the other subfields of anthropology (and several other sciences). Before examining how modern archaeology articulates with the rest of anthropology, let's first see how anthropologists carve up the pie of human existence.

Kinds of Anthropologists

Anthropology embraces four primary fields of study: **biological anthropology**, **cultural anthropology**, **linguistic anthropology**, and **archaeology** (all shown in Figure 2-1).

Biological Anthropology Biological (or physical) anthropologists study humans as biological organisms. Some work with human fossils to reconstruct the biological

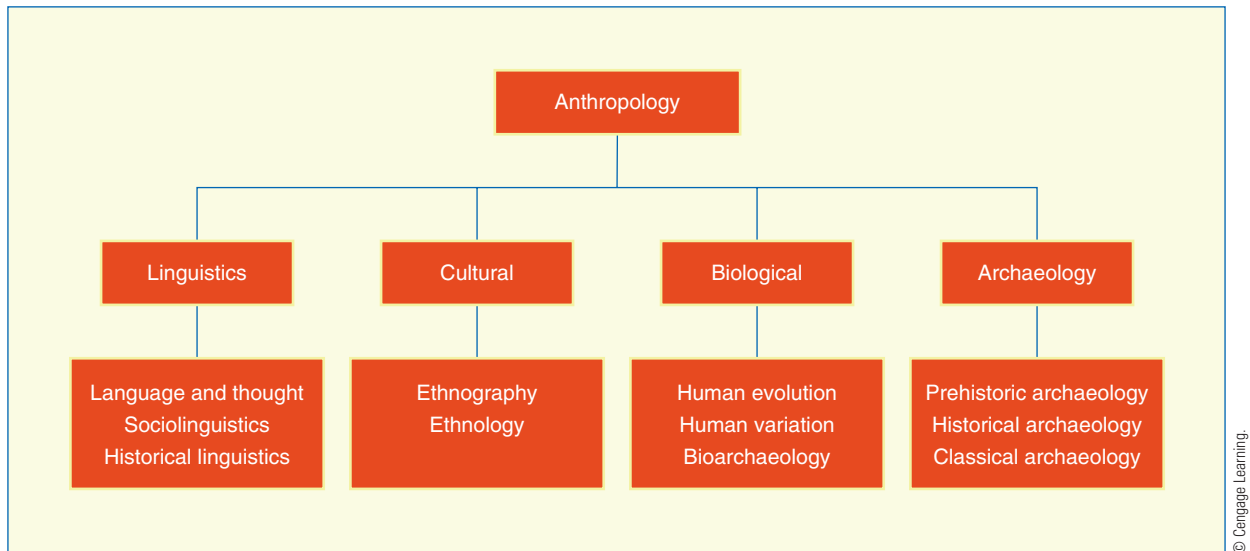


Figure 2-1 The four subfields of anthropology and their areas of study.

evolution of humans. Others study modern human biological (genetic) variability or work in forensic anthropology (featured in TV programs such as *CSI* and *Bones*); others study the biology and behavior of nonhuman primates, such as chimpanzees; still others are bioarchaeologists, who study the past via human skeletal remains. Archaeologists overlap with biological anthropologists because they often encounter human skeletons, and biological anthropologists are essential in the recovery and analysis of these remains. (We return to bioarchaeology in Chapter 10.)

Cultural Anthropology Cultural anthropologists describe and analyze the culture of modern human groups. Cultural anthropologists commonly employ the method of **participant observation**, gathering data by personally questioning and observing people by physically living in their society. Anthropologists study rituals, kinship, religion, politics, art, oral histories, medical practices—anything and everything that people in contemporary societies do, say, or think. Archaeology overlaps with cultural anthropology in that some archaeologists conduct research with living peoples to understand the relationships between behavior and material remains (see Chapter 8). And all archaeologists look to ethnographic research for ideas about how to interpret the things they find in sites.

Linguistic Anthropology Anthropological linguists evaluate language: how sounds are made, how sounds create languages, the relationship between language and thought, how linguistic systems change through time, the basic structure of language, and the role of language in the development of culture. Anthropological linguists also use language to chart historical relationships and track ancient migrations between now separate, but linguistically related,

populations. Many modern linguists study how people acquire second languages and work with native peoples to revive dying languages. Archaeology overlaps with linguistics when language helps reconstruct when and from where modern populations migrated.

Archaeology Archaeologists study human culture as well, but their technology and field methods differ from those of cultural anthropologists. Lacking living, breathing informants, archaeologists acquire their data through the recovery of material remains—stone tools, broken bones, potsherds, pollen, plant parts, and so on—commonly by meticulous excavation (Figure 2-2). They analyze these material remains with a powerful array of techniques. As we will see, these methods produce information and insights that living, breathing informants probably never would (or could) provide.

Modern archaeology is today a major component in many graduate programs in anthropology. Undergraduates often tell us that archaeology is the liveliest and most exciting program within anthropology. Cultural resource management (see Chapter 15) is the most employable kind of archaeology, even for undergraduates (it's a good way to make a living). In later chapters, we explore the dazzling assortment of new ways to understand and recreate the past. Look for archaeology to continue making significant contributions to the overall mission of anthropology.

archaeology The study of the past through the systematic recovery and analysis of material remains.

participant observation The primary strategy of cultural anthropology, in which data are gathered by questioning and observing people while the observer lives in their society.



© Ofer Bar-Yosef

Figure 2-2 Hayonim Cave in Israel, where careful excavation has allowed archaeologists to make important discoveries in human evolution.

The Culture Concept

We have said that a global, comparative, and holistic perspective unites the diversity within anthropology. But even more than that, it is the concept of **culture** that brings together the subfields of anthropology. The classic definition of culture was offered by Sir Edward Burnett Tylor (1832–1917), whom many consider to be the founder of modern anthropology. Tylor’s definition of “culture” appeared in 1871 on the first page of anthropology’s first textbook: “Culture . . . taken in its wide ethnographic sense is that complex whole which includes knowledge, belief, art, morals, law, custom, and any other capabilities and habits acquired by man as a member of society.”

Culture in Tylor’s sense is *learned*—from parents, peers, teachers, leaders, and others. Note that culture is not biological or genetic; any person can acquire any culture. And under this anthropological definition, all peoples have the same amount of culture. Somebody who can recite Shakespeare and listens to Beethoven is no more “cultural” than one who reads *People* magazine and prefers Lady Gaga. If a baby born to European parents were raised in China, that individual’s appearance would come from its genes (as moderated by environmental factors), but he or she would speak Mandarin or Cantonese, and act and think as other Chinese people do.

culture An integrated system of beliefs, traditions, and customs that govern or influence a person’s behavior. Culture is learned, shared by members of a group, and based on the ability to think in terms of symbols.

ideational perspective A research perspective that focuses on ideas, symbols, and mental structures as driving forces in shaping human behavior.

Culture creates our different conceptions of life, about what is proper and what is not. Tribal people in New Guinea think it laughable that American women wear earrings, but believe it’s normal for men to wear bone or shell nose ornaments for ceremonies. Cultures change over time; material factors (such as nutrition) and historical factors (such as contact with other peoples) affect this process. Because archaeology is concerned with how cultures change over time, the concept of learned culture is essential to archaeology.

Culture is also *shared*. Although everyone is an individual with his/her own values and understandings, members of a human group share some basic ideas about the world and their place in it. Anthropology focuses on such shared ideas, rather than on individual variations of those ideas. Many Euro-American homes, for instance, are divided into multiple rooms, including a living room, a smallish kitchen, a family room, and bedrooms. This pattern is considered normal and comfortable by most Euro-Americans.

But, according to George Esber (Miami University), when Apache people were given the chance to design their own homes, they preferred a single large living area that included the kitchen, with only the bedrooms and baths separate. The central living area was to accommodate large social gatherings. In order to cook for those gatherings, Apaches also preferred kitchens with an almost industrial capacity, including large cabinets to hold large cooking pots. Clearly, shared ideas about life are reflected in shared social behaviors that in turn result in patterned sets of material remains—the sort of things that archaeologists recover.

Finally, culture is *symbolic*. Consider the symbolism involved in language: There is no reason that the word “dog” in English means “a household pet,” any more than does “chien,” “perro,” or “alika” (French, Spanish, and Malagasy). What’s more, the idea of dogs as pets is a cultural idea. Indeed, in many places, such as Micronesia and Southeast Asia, dogs are considered feast foods. Though this disturbs many Americans, the idea of “pet” is not inherent in a dog—it is a socially constructed, symbolic meaning that a culture applies to dogs. Symbolic meanings of behavior condition what we do—for example, what we eat—which in turn affects the material traces of those behaviors, such as which bones wind up in ancient middens.

So, culture is learned, shared, and symbolic. Culture provides you with a way to interpret human behavior and the world around you, and it plays a key role in structuring the material record of human behavior—which archaeologists recover.

How Do Anthropologists Study Culture?

To oversimplify a bit, anthropologists study culture in two basic ways. An **ideational perspective** focuses on ideas, symbols, and mental structures as driving forces in shaping

human behavior. Alternatively, an **adaptive perspective** emphasizes technology, ecology, demography, and economics as the key factors defining human behavior. Let's examine each of these.

Culture as Ideas The ideational perspective holds that culture is a complex set of conceptual designs and shared understandings that govern the way people act. This perspective on culture emphasizes ideas, thoughts, and shared knowledge and sees symbols and their meanings as crucial to shaping human behavior. It encompasses material culture insofar as material things manifest symbolic ideas.

The ideational theorist insists on “getting inside a person's head” to seek out the shared meanings of a society. According to the ideational view of culture, one cannot comprehend human behavior without understanding the symbolic code for that behavior.

Culture as Adaptation An adaptive perspective privileges “culture as a system.” Social and cultural differences are viewed not as reflections of symbolic meanings, but rather as responses to the material parameters of life, such as food, shelter, and reproduction. Human behaviors are also seen as linked together systemically, meaning that change in one area, say technology, will result in change in another area, such as social organization. The cultural system—technology, modes of economic organization, settlement patterns, forms of social grouping, and political institutions—articulates the material needs of human communities with their ecological settings.

In the adaptive perspective, culture change results from those elements of technology, subsistence economy, and social or political organization most closely tied to life's material needs. Archaeologists working with the adaptive perspective link cultural behaviors largely to the environment, demography, subsistence, or technology.

Let's look at an example of how these two perspectives produce different (but complementary) understandings of cultural behavior.

An Example: Kwakwaka'wakw Potlatch

The Kwakwaka'wakw (pronounced Kwak-WAK-a-wak, meaning “speakers of Kwak'wala”) are a Native American tribe living on the coast of British Columbia. Prior to European contact, they lived primarily by fishing for salmon and halibut, hunting sea mammals, and gathering shellfish. They particularly depended on fall salmon runs to provide most of their food for the long winter. Kwakwaka'wakw once lived in villages that consisted of many large decorated cedar-plank houses and that often housed several related families. They had a social hierarchy in which some families claimed a higher rank than other families; slaves were occasionally taken in raids between villages. Many



Figure 2-3 An artist's rendering of a late-nineteenth-century Kwakwaka'wakw potlatch ceremony (painting by Will Taylor).

Kwakwaka'wakw still live in their original territory, and although some are commercial fishermen, others are carpenters, computer programmers, lawyers, and teachers.

The **potlatch** is an element of traditional Kwakwaka'wakw life that has fascinated anthropologists for more than a century (Figure 2-3 shows a contemporary artist's rendering). The potlatch is an example of competitive feasts, a social custom found in many societies. The term comes from Chinook, a Northwest Coast **trade language**, and means “to flatten” (you'll see why in a moment). Potlatches varied in size, from small affairs between families to huge feasts between villages—the kind the Kwakwaka'wakw called “doing a great thing.”

Potlatches accompanied high-ranking marriages between villages, funerals, and the raising of totem poles. Each potlatch involved ambitious, status-hungry men who battled one another for social prestige by hosting massive, opulent feasts that proceeded according to culturally dictated rules. The host parceled out gifts of varying value to his guests from another village: boxes of candlefish oil, baskets of berries, stacks of blankets, animal skins. As the chief presented

adaptive perspective A research perspective that emphasizes technology, ecology, demography, and economics as the key factors in defining human behavior.

potlatch Among nineteenth-century Northwest Coast Native Americans, a ceremony involving the giving away or destruction of property in order to acquire prestige.

trade language A language that develops among speakers of different languages to permit economic exchanges.

each gift, the guests responded with (culturally prescribed) dissatisfaction, careful not to imply that their host was being generous.

Potlatches were theatrical, involved bonfires, magic tricks, and singing, with ranking families displaying valuable family heirlooms such as carved dishes. There were elaborate dances, such as the cannibal dance, in which members of the audience might be bitten, and others in which birds and whales were portrayed by wooden masks whose hinged mouths would dramatically open wide to reveal a human face peering up from the throat.

And potlatches involved food, lots and lots of food. Men drank fish oil from shovel-sized spoons. Guests stuffed themselves and crawled groaning into the forest, to vomit and return for more. The more food one gave away, the greater one's prestige.

The feasting extended beyond simple gluttony. A high-ranking member of the host village would give away blankets, slaves, canoes, and other goods to a high-ranking man from a rival village. Another item was “coppers”—hammered, shield-like sheets of European copper, often with designs embossed or painted on their surfaces. The importance of coppers was underlined by the fact that many had names, such as “Killer Whale,” “Beaver Face,” and “All Other Coppers Are Ashamed to Look at It.” Late-nineteenth-century potlatching sometimes culminated in the outright destruction of property—hosts threw coppers into the sea and burned food, clothing, money, and canoes.

There was a cultural logic behind this conspicuous consumption: The more goods given away or destroyed, the greater the host's prestige. The guest chief would belittle the host's efforts, but to regain prestige he would eventually have to give an even grander feast.

The Potlatch as Ideational Message So, what was the potlatch all about? What was the symbolic message of the feasts? How did the participants understand it?

For the person giving the feast, the objective was prestige. Hosts obtained the dispersed goods through hard work, but also by giving smaller potlatches within their own villages. Traditionally, the value of goods given in those potlatches had to eventually be returned (not the exact same gifts, but their equivalents) plus a little bit more. This was investment banking. By giving away all the collected goods to a visitor or by destroying them, a host insulted his guests by symbolically saying, “This is how powerful I am. I can give all this away and it does me no harm. You can't do this.” And through association with this man, village members also gained prestige. For them, a successful potlatch truly was “doing a great thing.”

To the non-Kwakwaka'wakw, the images of killer whales, huge spoons, bears, and boxes of candlenfish oil seemed bizarre and chaotic. Indeed, the Canadian government found potlatches to be barbaric and wasteful and banned them in

1885 (a ban not lifted until 1951). Euro-Canadians did not share in Kwakwaka'wakw culture. They did not know the stories and legends that “made sense” of the masks and symbols. Failing to comprehend the “purpose” of potlatching, Euro-Canadians saw only chaos and waste that stood in the way of converting the Kwakwaka'wakw to Christianity and a system of Western values.

But suppose a nineteenth-century Kwakwaka'wakw person could view an American football game. Huge, costumed, helmeted men smash into one another. Observers in the stands scream, some literally calling for blood; many have painted their faces and bodies in garish colors or wear horned helmets. Observers often drink to excess, and fights may break out in the bleachers. Would a Kwakwaka'wakw person have understood? Or would he/she have thought this was sheer madness?

The Potlatch as Adaptive Strategy An adaptive perspective seeks different interpretations for the potlatch. How could the loss of so much personal property serve useful ecological, technological, or economic purposes?

Recall that the Kwakwaka'wakw depended on salmon for their winter food supply. Some villages were located on streams with large, reliable salmon runs; others were on streams of smaller, less reliable runs. These less fortunate villages tried to ally themselves with the larger, more fortunate villages—villages they could count on for assistance in years of poor salmon runs. Through alliances cemented by potlatching, the large villages also forestalled the possibility that smaller villages might, under desperate conditions, attack them. They fought wars of “property” in addition to (or instead of) wars of “blood.” Through the potlatch system, the less fortunate villages were invited to potlatches hosted by their more prosperous neighbors. Although visitors were required to endure seemingly endless barbs and slights, they departed with full bellies—and, more important, with a powerful ally.

What if some villages sustained a continued subsistence catastrophe? Some research suggests that the potlatch helped shift population from less productive to more productive villages. Economically prosperous villages could boast of (and demonstrate) their affluence at the potlatch ceremonies, thereby inducing guests to leave their impoverished situations and join the wealthier, more ecologically stable village. More people meant more laborers and bigger, more elaborate feasts that would allow a chief to outcompete his rivals. In other words, the drive for individual prestige offered material benefits for the rank-and-file villagers.

Which Perspective Is Better? In a word, neither. Each perspective sees the world differently, privileging some aspects and downplaying others. An adaptive perspective recognizes that humans must respond to the material conditions of their environments; it helps account for why the

potlatch occurred where and when it did. An ideational perspective shows how humans respond through particular, symbolically charged behaviors; it helps account for the particular ways in which the potlatch was conducted. We need both perspectives to understand human diversity and history. Both perspectives fall within an overarching scientific approach.

What's a Scientific Approach?

Science (from the Latin “to know”) refers, in its broadest sense, to a systematic body of knowledge about any field. Although the beginnings of modern science are generally traced to the European Renaissance and, earlier, to Islamic scholars, the origins of scientific thinking extend far back in human history. Archaeological sites preserve examples of early scientific reasoning: astronomical observations, treatment of disease, and calendrical systems. Cave paintings and carvings in bone or stone are often cited as early instances of systematizing knowledge.

Science as a distinct intellectual endeavor began in the seventeenth century, when Sir Francis Bacon codified the scientific method in his book *Novum Organum* (1620). Today, pure science is divided primarily into the physical sciences (including physics, chemistry, and geology), the biological sciences (such as botany and zoology), and the social sciences (such as anthropology). These are very different fields, and just as culture unifies the diversity of anthropology, a scientific approach unifies the sciences. Anthropologist Lawrence Kuznar (Indiana-Purdue University at Fort Wayne) provides several characteristics of a scientific approach:

- ▶ **Science is empirical, or objective.** Science is concerned with the observable, measurable world. Questions are scientific (1) if they are concerned with the detectable properties of things, and (2) if the result of observations designed to answer a question cannot be predetermined by the biases of the observer.
- ▶ **Science is systematic and explicit.** Scientists try to collect data relevant to solving a problem, and they try to specify their procedures, so that any trained observer under the same conditions would make the same observations.
- ▶ **Science is logical.** Scientists work not only with data, but also with the ideas that link data to interpretations, and with the ideas that link the ideas together. These linkages must be grounded in previously demonstrated principles; otherwise an argument is a house of cards.
- ▶ **Science is explanatory and, consequently, predictive.** Science is concerned with causes. It seeks theories—explanatory statements that not only predict *what* will

happen under a specified set of conditions, but also explain *why* it will happen.

- ▶ **Science is self-critical and based on testing.** Many people think that science is about white lab coats, supercomputers, and complex equations. Although science sometimes relies on such things, it's really about honesty. Scientists propose hypotheses, then they say, “Here is my idea; my job now is to prove it wrong; and here is my honest attempt to collect that evidence.” Scientists acquire understanding *not* by proving that an idea is right, but by showing that competing ideas are wrong. The best scientists are professional skeptics, always asking themselves: *How do I know that I know something?* Science, in this sense, becomes the right to be wrong.
- ▶ **Science is public.** Scientific methods, the observations, and the arguments linking observations with conclusions are explicit and available for scrutiny by the public. The origin or political implications of ideas are irrelevant. What matters in science is that ideas can be tested by objective methods.

Taken together, these characteristics of science produce scientific methods, elegant and powerful ways to understand the workings of the material world. Archaeologists have been doing scientific research for a long time. The public, however, frequently misunderstands science (see “What Does It Mean to Me? Does Archaeology Insult Native American Beliefs?”). To understand how the scientific method works, let's see how it was used to solve the “mystery” of the Moundbuilders.

How Science Explains Things: The Moundbuilder Myth

Sixteenth-century Europeans arriving on the North American continent confronted a serious intellectual challenge: Who were the people already living here? This was an important question because its answer begged another, more practical one: Did Europeans have the right to take the land?

Colonial Americans justified the taking of Native American lands in several ways, and one involved archaeology. Colonists occupying the eastern woodlands encountered thousands of mounds and earthworks, especially in the Ohio and Mississippi River valleys. Most mounds were modest, only a few meters in diameter, but others were enormous: Monks Mound at the site of Cahokia (just across the Mississippi River from St. Louis) stands nearly 70 feet tall, with a footprint larger than the largest of Egypt's

science The search for answers through a process that is objective, systematic, logical, predictive, self-critical, and public.



What Does It Mean to Me?

DOES ARCHAEOLOGY INSULT NATIVE AMERICAN BELIEFS?

Many contemporary American Indians do not trust anthropologists, including archaeologists. This seems odd because anthropologists have long seen themselves as champions of Native American legal and cultural rights. Many anthropologists, for example, testified on behalf of tribes in the 1950s and 1960s, when Indian land claims were decided in courts, and many work to maintain Indian rights and languages today.

However, one problem is that many Native Americans see a “scientific” approach to understanding their history as denigrating their own indigenous histories. This disconnect is particularly evident in the research regarding American Indian origins—one of the major questions in American archaeology. Although archaeologists still debate the timing and exact routes, modern genetic data demonstrate that the ancestors of Native Americans migrated from Asia at least 13,500 years ago.

This position contrasts with most Native American origin beliefs. In many of these,

the first people emerged from a hole in the earth, having traveled up from successive layers of worlds that lie below this one. Traditional Hopi beliefs, for example, hold that the modern world is the fourth world (with more to come).

No Native American religion explicitly states that “people came from Asia.” Many American Indians believe that their people have always been here; because they “didn’t come from anywhere,” many take the scientific suggestion that they did as an insulting affront to their religious beliefs, just as the idea of scientific evolution is insulting to fundamentalist Christians. We disagree and believe that scientific inquiry into Native American origins can be done in a respectful manner. As scientists, we are not challenging religious beliefs. Science evaluates claims about the *material* world, and religion is fundamentally about the *nonmaterial* world. Religions do sometimes make claims about the material world: How old is the earth? Where did people come from? What’s the biological

relationship between humans and animals? Because these are claims about the material world, we can subject them to respectful scientific scrutiny.

So, what does it mean that scientific archaeology holds that the ancestors of Native American people came from Asia? Does this prove that Native American religions are wrong?

Absolutely not. Nobody can prove or disprove claims of the nonmaterial world using a method that evaluates claims about the material world. Archaeologists can prove only that a religious claim about the material world cannot be taken at face value. Some might think this means that the religion is false; but it might also mean that a religion’s claim about the material world, even if unsubstantiated by science, holds deeper truths. From such a perspective, science encourages one to look deeper into religious beliefs, to find a significance that goes beyond issues of mere space and time.

pyramids. Some mounds were conical in shape; others were truncated pyramids. Some were “effigy mounds,” fashioned in the shape of animals such as serpents and birds (Figure 2-4 shows an example); others were precise geometric embankments enclosing many acres. Some mounds were constructed as early as 5500 years ago in the southern Mississippi River valley, and by 3000 years ago the practice was widespread across the eastern United States.

Colonial farmers plowed many of the mounds, and found curious things inside, including human skeletal remains, and remarkable, eye-catching artworks such as copper and antler headdresses and stone pipes crafted into birds and other animals. They also found sheets of intricately shaped mica, carved shells, massive log tombs, spear points, incised pottery, copper ornaments, and polished stone disks (Figure 2-5).

Inspired by such finds, colonial scholars dreamed up several ideas to explain who built the mounds. The favored interpretation held that the Moundbuilders were a superior race wiped out by Indians. Some thought this pioneering race was Viking; others nominated the Egyptians, Israelites,

Chinese, Greeks, Polynesians, Phoenicians, Norwegians, Belgians, Tartars, Saxons, Hindus, Africans, Welsh, or residents of the lost continent of Atlantis. An Ohio minister even suggested that God had created the Serpent Mound in southern Ohio to mark the site of Eden.

The Moundbuilders, it seemed, might have been anyone—except the ancestors of American Indians. Nineteenth-century scholars saw the Indians as late-arriving marauders, destroyers of a magnificent civilization. After all, weren’t the mounds full of human bones, evidence of past battles? Thus arose the myth of a non-Indian Moundbuilder civilization.

This view of history provided colonists with a sense of innate superiority and the right to avenge the Moundbuilders by dispossessing Native Americans of their land. Handy history—but was it true?

A President’s Attention From the start, Moundbuilder myths attracted scrutiny at the highest levels of American society—including that of Thomas Jefferson (1743–1826), author of the Declaration of Independence, third president



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Figure 2-4 Aerial photo of Serpent Mound, an effigy mound in Ohio.

of the United States, musician, inventor, horticulturalist, architect—and the first scientific archaeologist in America.

Jefferson's contribution to archaeology shows up in his only book, a response to questions sent to him by French scholars. *Notes on the State of Virginia* (1787) dealt, in part, with the aborigines of Virginia, their origin, and the question of the mounds. Jefferson listed the various Virginia tribes, related their histories since the settlement of Jamestown in 1607, and incorporated a census of Virginia's current Native American population. He argued that Native Americans were the intel-

lectual and physical equals of Europeans and wholly capable of constructing the pre-historic earthworks of the United States.

Jefferson took another critical step by proceeding to excavate a burial mound located on his property. Today this step seems obvious, but Jefferson's contemporaries vastly preferred rummaging through libraries and archives rather than soiling their hands with bones, stones, and dirt to answer intellectual questions.

Jefferson's account described his method of excavation, the different layers of earth, and the artifacts and human bones that he encountered. He then tested the idea that the bones resulted from warfare. Noting the absence of traumatic wounds (such as those made by arrows) and the presence of children, Jefferson rejected the idea that the bones were those of fallen soldiers. Instead, he surmised that the burials had accumulated through

repeated use. Overall, Jefferson saw no reason to doubt that the ancestors of Native Americans had built the mounds. Few archaeologists today would modify Jefferson's conclusions.

Still, Jefferson thought that more information was needed. So, as president of the American Philosophical Society in 1797, he distributed a pamphlet calling for the systematic collection of information on the mounds. Jefferson's suggestion finally bore fruit in 1848, thanks to the joint efforts of two very different men.

The Surveyor and the Doctor Ephraim Squier (1821–1888) was a Connecticut civil engineer, surveyor, journalist, and later in life, a politician intent on making a name for himself (advocating the radical idea of building a canal across Central America). Like many educated people of the time, Squier had wide-ranging interests, but the Moundbuilders held a special fascination for him.

Edwin Davis (1811–1888), an Ohio physician, was also intrigued by the mounds, especially those near his hometown of Chillicothe. But unlike Squier, Davis pursued a calm, anonymous life with his family near his hometown.

With Squier's ambition and Davis's money, the two gentlemen formed an alliance to study the mounds. Although the two came to dislike each other intensely, their names will forever be wed in American archaeology because of their 1848 monograph, *Ancient Monuments of the Mississippi Valley*—the first publication by the newly formed Smithsonian Institution.

Squier and Davis claimed they did not seek to “sustain” any particular hypothesis, only “to arrive at truth” and to avoid “speculation.” True to this intent, they devoted the first 300 pages of their book to meticulous description of mounds



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Figure 2-5 An etched slate from Moundville, Alabama. Artifacts such as these convinced nineteenth-century scholars that the Moundbuilders were a superior culture.