

# WORLD PREHISTORY AND ARCHAEOLOGY

PATHWAYS THROUGH TIME

Third Canadian Edition



MICHAEL CHAZAN

**WORLD**  
**PREHISTORY**  
**AND**  
**ARCHAEOLOGY**

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THIRD CANADIAN EDITION

**MICHAEL CHAZAN**  
UNIVERSITY OF TORONTO

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FOR MICHELLE



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# PREFACE

Archaeology is the study of how humans have created the world we live in—a voyage of exploration into the human past. The goal of this voyage is to gain new perspectives and insights into who we are and how our world came into being. As is true of all sciences, archaeology is not a search for absolute and final answers. Archaeologists develop knowledge of the past that can be continuously questioned and improved upon. The goal of this book is to involve students in the current state of archaeological research—to reveal how archaeologists work and what they know. The fascination of archaeology is found in the continual process of human self-discovery. This book will help connect students to that process and show them not only the discoveries that have been made, but also the challenges that remain.

## New to This Edition

The third Canadian edition includes expansions of existing chapters and updated information throughout.

- Recent discoveries are examined, including the genetics of Neanderthals and related populations, early symbolic artifacts from South Africa, the Iceman and its implications for Neolithic Europe, and the Harappan city of Dholavira.
- Expanded coverage of both the practice and the legislation of cultural resource management (CRM) archaeology is included in Chapter 1, “Getting Started in Archaeology,” and Chapter 2, “Putting the Picture Together.”
- The archaeology of complex societies in East Asia has been expanded and grouped in Chapter 12, “Locating the Source of Authority: Early States in Asia.” This chapter now includes material on the expansion of the Chinese state, the Silk Route, the development of state societies in Japan, and the development of Angkor.
- The Epilogue now focus on the recent past including the archaeology of the slave trade, with examples from Gorée, Senegal and Annapolis, Maryland, and the archaeology of industrialization, with examples from Lowell, Massachusetts and Ludlow, Colorado.
- Expanded coverage of the Maya civilization includes the discoveries from the Preclassic period at the site of San Bartolo, the use of LiDAR at Caracol, and the painted murals at Calakmul.
- Expanded coverage of Canadian archaeology includes Archaic sites (in Chapter 6, “The Peopling of Australia and the New World”) and historic archaeology (in the Epilogue).
- Enhanced electronic resources include enhanced maps, podcasts custom-recorded for this text in the eText, access to selected articles from the journal *Antiquity* and *Proceedings of the National Academy of Sciences* chosen for each chapter by the author, and a gallery of 3D objects and animations.

In archaeology, it is not enough to raise questions; one must also think of methods for providing the answers. People often think of archaeology as a random accumulation of artifacts or a series of chance discoveries. In practice, archaeology is a far more active and creative undertaking. Certainly, the excitement of discovery



plays an essential role. Even in the most carefully planned project, the possibility always exists that the next shovel of soil will lead to an unexpected revelation. In this third Canadian edition, you will read about the surprising genetic evidence of a new species contemporary with Neanderthals, early ages for the origin of millet domestication in China, and the impressive murals at the early Maya site of San Bartolo—as well as the earliest evidence for fire on an archaeological site from my own research in South Africa.

Much of the excitement of archaeology comes from asking questions and finding answers. In this edition, you will also read about the application of new perspectives and methods, such as the use of surveying to understand the development of social complexity in China and the role metallurgical analyses play in elucidating the ancient technologies of the Andes.

In working on this book, I have been struck by three characteristics of archaeology today. The first is that archaeology is a truly global discipline. One can no longer remain up-to-date simply by relying on the information emerging from a small number of centres of research. The challenge today is to keep abreast of a torrent of information coming from archaeologists all over the world. In writing this book, I am painfully aware that there is likely to be information I have missed and vital insights I have failed to incorporate. However, thanks to a wealth of resources available through university library websites, research that in the past would have taken weeks to conduct can now be completed in minutes with a few clicks of the mouse.

The second characteristic of archaeology today is that it often involves deploying methods from the study of natural sciences. In many cases, research requires collaboration between natural scientists and archaeologists. One of the most important skills for an archaeologist today is to be able to collaborate with specialists in other fields. Collaboration is a tricky business that requires trusting our partners and stretching our perspectives, but the result is a significant increase in scientific capacity.

The third characteristic of contemporary archaeology is that there is increased engagement with the modern world. Archaeologists around the globe today find themselves enmeshed in complex issues ranging from community identity to the tourist industry. The recognition of the fragility and importance of the archaeological record is central to contemporary archaeology.

Preparing the third Canadian edition has involved some reorganization and expansion of coverage. However, the main outcome of the revision is a book with a stronger conceptual core: Archaeology is presented as a dynamic, scientifically rigorous, and socially engaged inquiry into the remains of the human past that survive in the world today.

## Organization

Part One of this book, “The Past Is a Foreign Country: Getting from Here to There,” presents an introduction to archaeological method and theory. The first chapter, “Getting Started in Archaeology,” begins in the field and discusses how archaeologists locate and excavate sites. From the field, we move into the laboratory to look at how the remains recovered in an excavation are analyzed. Archaeology involves not only conducting field and laboratory work, but also developing a framework for thinking about the past. In Chapter 2, “Putting the Picture Together,” we consider how well we know the past and how much we can learn about it. This chapter presents a brief history of the ways archaeologists have thought about the past.

From here, we turn to what we currently know about prehistory. The next three parts of the text examine human evolution, agricultural beginnings, and the



development of political complexity, respectively. Part Two, “Human Evolution,” covers the period from the first evidence of tool manufacture to the spread of modern humans (*Homo sapiens*) throughout the globe. Human evolution involves the interaction between changes in human anatomy and changes in the way humans lived and in the tools they used. The four chapters in this part follow the process of biological evolution, while tracking the geographical spread of human populations and developments in the way they lived.

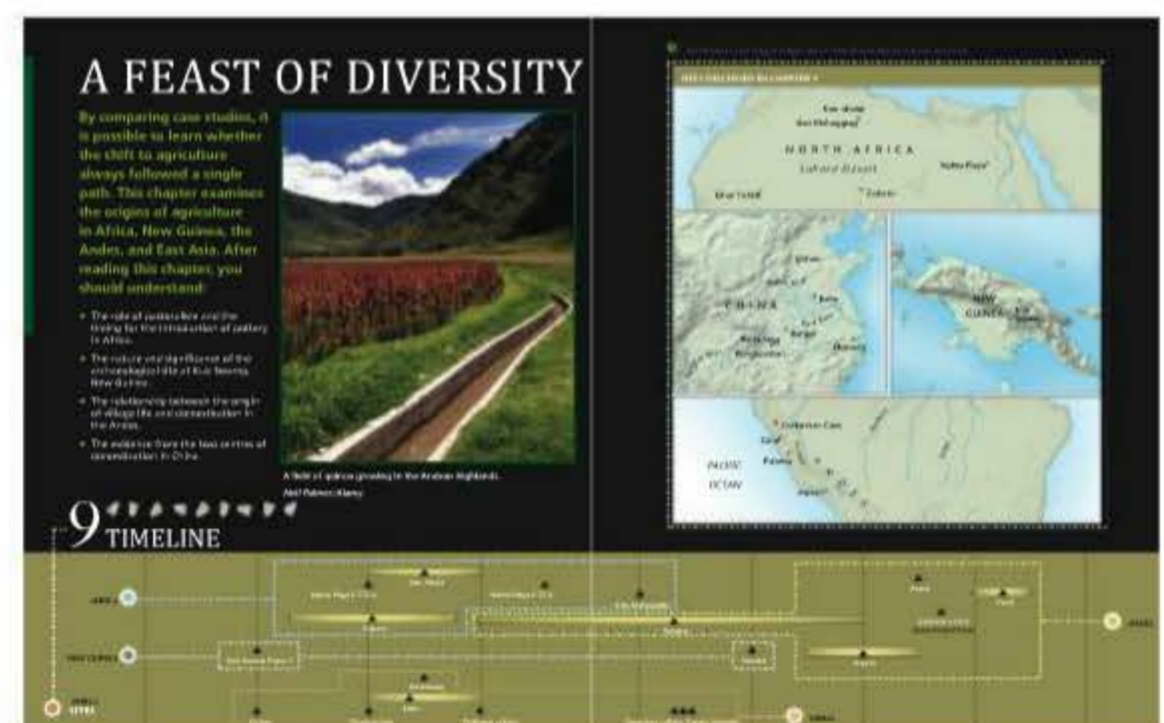
Part Three, “Perspectives on Agriculture,” examines the shift to an agricultural way of life. The development of agricultural societies demanded a profound reorientation of the way humans related to plants and animals, along with equally significant changes in society and technology. Because the transition to agriculture took place independently in several distinct regions, it is possible to take a comparative approach to the origins of this new way of life to gain a broad understanding of the process. Chapter 7, “Towers, Villages, and Longhouses,” presents the archaeological record pointing to the beginnings of agriculture in the Middle East and the spread of agriculture into Europe. Chapter 8, “Mounds and Maize,” focuses on the origin of maize (corn) agriculture in Mesoamerica and its spread into North America. The adoption of maize agriculture in Eastern North America is particularly interesting and complex, as maize was integrated into an existing indigenous agricultural system. Chapter 9, “A Feast of Diversity,” broadens the comparative perspective by briefly considering a number of other civilizations in Africa, China, New Guinea, and Peru. It becomes clear that the development of agriculture often spanned a period of several thousands of years and that the process differed significantly among regions.

Following the adoption of agriculture, societies in many parts of the world expanded in scale and increased in population, which in turn led to increased social inequality. Power and access to resources came to be controlled by a smaller segment of people, resulting in the emergence of state societies. Finally, Part Four, “The Development of Social Complexity,” covers many of the world’s most spectacular and enigmatic archaeological sites, including Stonehenge, the pyramids at Giza, and the cities of the Maya. As with agriculture, social complexity developed independently in a number of regions. Thus, it is again possible to use a comparative approach to gain a broad understanding of this process.

The first chapter of Part Four—Chapter 10, “Complexity without the State”—considers the monumental sites of Stonehenge, Pueblo Bonito, Cahokia, and Great Zimbabwe, constructed by societies that were characterized by emerging social inequality. The remaining chapters present case studies of early states and empires and are organized geographically. Coverage has been expanded to include Japan and Angkor. Coverage of early states in China, Mesoamerica, and the Andes has also been expanded. The text concludes with an epilogue entitled “Bringing It Back Home,” in which we look at the traces of the past in our familiar world.

## Pedagogy

Every chapter contains a number of pedagogical elements to guide students through the text. Each chapter opener includes satellite location maps and timelines to orient students in time and place to the sites discussed. Learning objectives help students focus their reading of each chapter. Key terms, concepts, and place names are defined or described when they first appear within the text; they are also defined in the margin of the page.





Subsequently, they are all listed together in a section at the end of each chapter called *Key Terms*, along with a *Chapter Summary* and a list of *Review Questions*. Each chapter contains dozens of stunning illustrations and photographs to engage students in the subject matter, demonstrate key concepts, and visually convey the spectacular nature of our stops along the pathways through time.

## Distinctive Features

The main purpose of this book is to present an integrated picture of prehistory as an active process of discovery. From this perspective, we cannot relegate methodological issues to the opening chapters alone. After students are introduced to archaeological method in the first two chapters, the question of *how* we know the past comes up on numerous occasions throughout the remaining text. A number of features have been developed to draw together an integrated presentation of prehistory.

### • Toolbox

*Toolboxes* introduce aspects of archaeological methods that are particularly relevant to the material covered. There are two *Toolboxes* per chapter. *Toolboxes* are critical for achieving the aim of this book: to integrate prehistory with an introduction to archaeological methods. Examples of *Toolboxes* in this third Canadian edition include “Archaeoacoustics” (Chapter 2), “Faunal Analysis and Taphonomy” (Chapter 2), “*Chaîne Opératoire* and the Levallois Method” (Chapter 4), “Experimental Archaeology” (Chapter 6), “Archaeology and Genetics” (Chapter 11), “Underwater Archaeology” (Chapter 12), “Space Syntax” (Chapter 12), and “Human Osteoarchaeology” (Chapter 13).

### • Archaeology in the World

Despite the stereotype of the archaeologist as a cloistered academic, archaeology is very much a discipline that takes place in the real world. Issues such as control over human burial remains, the antiquities trade, and the preservation of threatened cultural resources are every bit as important to the field as trowels and levels. Archaeology is not only the study of what happened in the past, but also the examination of the role of the past in today’s world.

To emphasize the significance of the role of the past in the present, every chapter includes a boxed feature called *Archaeology in the World*. These boxes pinpoint ethical issues relevant to the archaeology of the periods discussed in the chapter. Through reading these features, students will see that archaeology plays a role in the present. *Archaeology in the World* topics include “Religion and Evolution” (Chapter 4), “Repatriation of Indigenous Burial Remains” (Chapter 6), “The Trade in African Antiquities” (Chapter 10), and “The Fate of Iraq’s Antiquities” (Chapter 11). This third Canadian edition includes new features on “Community Archaeology” (Chapter 1), “Political Borders and Archaeology” (Chapter 7), “Who Owns the Past?” (Chapter 8), “Archaeology and the Environment” (Chapter 9), “Archaeology and Development” (Chapter 12), “Archaeology and Tourism” (Chapter 13), and “Ancient Agriculture and Modern Development” (Chapter 14).

### • From the Field

A primary goal of this text is to draw students into the process of archaeological research. Rather than sitting on the sidelines observing the game, students should be on the playing field. This does not mean that this book is suitable only for future

### TOOLBOX

#### Ethnoarchaeology

Ethnoarchaeology refers to research carried out by archaeologists living with and observing communities in order to make a contribution to archaeology. Archaeologists bring to the study of modern cultures an intense interest in the material aspects of human lives. Ethnoarchaeological research covers a wide range of domains, including subsistence, technology, ideology, and site formation.

Much of our understanding of stone tool manufacture comes from ethnoarchaeological studies of societies that still use stone tools or have used them recently. Among the stone tool techniques studied by ethnoarchaeologists are ground stone and manufacture in Papua New Guinea, flint knapping in Australia, obsidian tool manufacture and use in Ethiopia, and stone bead manufacture in India. All of these studies provide insight into the process of tool manufacture and the way tools are used. Ethnoarchaeological studies have also provided insight into how people think about the tools they are making. For example, on the basis of ethnoarchaeological research in Australia, Brian Hayden has questioned whether people making stone tools ever think about making a specific type of tool. Interestingly, in the group Hayden worked with, the focus of attention was on the type of edge produced, and the actual form of the tool was of little importance.

Ethnoarchaeological research also can provide a reminder of the limitations of the archaeological record. In 1974 and 1975, Robert and Priscilla Jones lived for 22 weeks with the Slavey Dene people in the Northwest Territories (Jones 1983). The Slavey Dene spend most of the year in Fort Norman, but move to seasonal camps during the late winter or early spring. The Joneses’ research examined the structure of one of these camps. According to David and Kramer (2007), the Joneses’ experience living with the Slavey Dene led them to recognize the “material immensity of the gap . . . between the results of field archaeology and the richness of a living culture” (288). This gap is particularly wide in the case of hunter-gatherer societies, which made most artifacts out of perishable materials.

In some cases, ethnoarchaeologists do not simply make observations, but rather collaborate with members of local communities to carry out experiments. During the 1970s, Peter Schmitt and his colleagues collaborated with members of a Haya community from northeastern Tanzania to smelt iron by traditional methods (Schmitt 1997). Because the Haya had not practiced traditional smelting for over 50 years, this project was guided by Haya elders who remembered participating in smelting operations as children. The resulting smelt was only partially successful, but it did provide an opportunity to carefully document the functioning of the iron furnace, as well as the processes involved in producing charcoal and in mining the clay used to build the furnace. The furnace produced in the experiment served as an important point of reference for the interpretation of archaeologically excavated furnaces.

Despite the obvious value of ethnoarchaeological research, some archaeologists have reservations about the use of ethnographic analogies in archaeology. Martin Wobst (1978) has written of the “tyranny of the ethnographic record,” which leads archaeologists to assume that the cultures they are investigating were similar to ethnographically known cultures. A slavish adherence to analogy can dull our awareness of those aspects of past societies that are unique and different from characteristics of societies living in the present. The use of ethnographic analogy is also not helpful in studying long-term processes of cultural change that last hundreds, thousands, or even tens of thousands of years and that are of particular interest to archaeologists.

ARCHAEOLOGY: MARIANO, Nelson David and Case-Kramer 2001. Ethnoarchaeology. Abingdon, Cambridge: Cambridge University Press.



FIGURE 1.17 Richard Lee conducting fieldwork with San hunter-gatherers in Botswana. Richard Lee.

### ARCHAEOLOGY in the world

#### Community Archaeology

There is a general trend in archaeology toward including local communities in the process and the benefits of archaeological research (McGuire 2008). In recent years, some archaeologists have taken this idea a step further and worked to develop a truly community-based archaeology, in which the archaeologists relegate to the local community at least partial control over their program of research (Marshall 2002). In many cases, archaeologists are trying to react with sensitivity to painful histories of colonization and disenfranchisement. In a project at the site of Quseir in Egypt, Stephanie Moser and her colleagues (2002) have developed some guidelines for the practice of Community Archaeology. They identify the following components for community archaeology projects:

1. communication and collaboration
2. employment and training
3. public presentation
4. interviews and oral history
5. development of educational resources
6. creation of a photographic and video archive
7. community-controlled merchandising

Moser and her colleagues make it clear that not all circumstances will fit this template and that Community Archaeology must be sensitive to local conditions. However, the range of topics included gives a good sense of the complexity of adopting a community-driven approach. The project at Quseir addresses elements of economic development, including employment and training, as well as merchandising aspects of local identity through the development of artifacts and oral history, and initia-

tives related to education. Some archaeologists, while appreciating the importance of a community-based approach, stress the complexities involved in such an undertaking. One of the most difficult problems is the definition of the community that is at the very root of Community Archaeology (Chinkanda and Patti 2008). In many areas of the world, the definitions of communities are deeply contested. However, this issue can feed into the process of Community Archaeology as archaeologists are drawn into discussions of the construction of local identities.

Community engagement is increasingly a significant component of many archaeological projects in Canada. The Ti’armin-Simon Fraser University Archaeology and Stewardship Program ([www.stammonstewardship.com/](http://www.stammonstewardship.com/))

archaeology) is a field school and research project that sets out explicit goals that go well beyond the scope of traditional archaeological research:

1. sustaining collaborations between the university and the Ti’armin First Nations
2. identifying, documenting, and investigating heritage sites
3. training university students and Ti’armin youth in archaeology and heritage stewardship
4. increasing awareness and knowledge about Ti’armin history
5. facilitating exchanges of information and experience among Ti’armin Elders, youth, and the university
6. advancing Ti’armin goals of self-governance, self-determination, and self-representation



FIGURE 1.21 Ti’armin cultural knowledge holder and project team member (Gabrielle Washington) and her daughter help screen for artifacts at one of the project’s excavation sites. Courtesy of Gailgaia Conley and Doree Lofsky.



archaeologists; rather, it is meant to provide the tools to give any student a lifelong engagement with archaeology, whether through travelling, visiting museums, reading, or joining in a research project. Toward that end, we have also included in each chapter a feature called *From the Field*, in which people—including students—who are actively involved in archaeological research write an informal report about a project relevant to the chapter subject.

Two new *From the Field* segments in this third Canadian edition are “Why Do I “Do” Archaeology,” by Joe Watkins (Chapter 2) and “Cultural Resource Management Archaeology in the Southwest,” by Sara H. Herr (Chapter 10). Other *From the Field* segments include “Early Hominins in the Nihewan Basin,” by Chen Shen (Chapter 3); “Understanding the Neanderthal Way of Life,” by Ariane Burke (Chapter 4); “The Strange Case of the Grimaldi Figurines,” by Michael S. Bisson (Chapter 5); “Mawlukhotepun—Working Together,” by Sue Blair (Chapter 6); “Towns They Have None”: In Search of New England’s Mobile Farmers,” by Dr. Elizabeth S. Chilton (Chapter 8); “Ethiopian Farmers Yesterday and Today,” by Catherine D’Andrea (Chapter 9); “Doing Regional Archaeological Settlement Patterns Survey in Northeast China,” by Christian E. Peterson (Chapter 12); “The Field School Experience,” by Joëlle Chartrand” (Chapter 13); and “Discovering a Ceremonial Site of the Ancient Moche People,” by Katrina Joosten (Chapter 14). I have also contributed features on my own fieldwork experiences in South Africa, Jordan, and Egypt. I hope that these sections will inspire some readers to consider volunteering on an excavation or enrolling in a field school. No words can replace the experience of uncovering the buried remains of the human past.

## • Canadian Research and Canadian Archaeologists

Canadian content is integrated throughout the book. In some cases, particularly the coverage of the Arctic in Chapter 6 and the Northwest Coast in Chapter 10, sections not found in the U.S. edition cover aspects of the archaeology of Canada. The research of Canadian researchers working around the world is also included in every chapter, augmented by a brief history of Canadian archaeology in Chapter 2. Furthermore, two special features are dedicated to the unique contributions of Canadian archaeology: *Canadian Research* boxes, which contain a brief essay that covers a research project by a Canadian archaeologist, and *Canadian Archaeologists*, which includes a listing of some Canadian archaeologists and a link to their websites, are found in each chapter. I hasten to add that this is not a comprehensive listing of Canadian archaeologists. My focus has been on providing information about Canadian archaeologists whose research is particularly relevant to the chapter.

## The Cover Image

This bone comb was found at the Garden Island site in Prince Rupert Harbour, British Columbia, in a level dated to 800 AD. The animal on the bridge of the comb is either a wolf or a bear. The tongue, ears, and eye are carved with particular care. George MacDonald points out that these are organs involved in communication and that the emphasis on these aspects of the animal might reference beliefs in the abilities of animals to communicate (MacDonald 1983). Whereas animals, particularly bears, can understand everything people say, people have only limited understanding of the language of animals.

**FROM THE field**

**The Author on His Fieldwork at Wonderwerk Cave, South Africa**

Wonderwerk Cave is a spectacular site located in the Northern Cape Province of South Africa, on the edge of the Kalahari. Although this is a remote area, our living conditions are quite good. We stay in small brick chalets built near the site, and most of the roads are tarred. The view from the cave is of an immense open space, a flat grassland that reaches to the horizon. A nice part of working at the site is that not only do we lack Internet access, but also we have to walk out to the main road to even get cell phone reception—a welcome break from my heavily connected life in Canada. However, this remote place is also the nexus of an international research team, as well as a diverse range of community interests. My role at Wonderwerk seems more like that of a ringmaster in a circus than that of an archaeologist. It might be best to begin by explaining how I ended up working at this site. In the late 1990s, I was completing a project in Israel with my colleagues Liora Horwitz and Naomi Porat. Liora is a faunal analyst, Naomi is a geologist, and I am an archaeologist who specializes in stone tools, so we make a good team. We began looking for a new project that would allow us to continue to study the shift from the Lower Paleolithic to the Middle Paleolithic, or, as they are known in Africa, the Earlier to the Middle Stone Age. By chance, Liora was off to South Africa to visit family, which included a visit to her uncle’s farm in the Free State. En route, she stopped off in Kimberley, a diamond-mining city that is home to Peter Beaumont. Peter is famous for excavating sites of the time range we were interested in, and before I knew it, I was off to South Africa for an unforgettable tour with Peter. The wealth of sites he showed us and the extent of the excavations he had carried out were simply staggering. We resolved to develop a project to analyze the collections from Peter’s excavations at Wonderwerk Cave housed at the McGregor Museum, carry out small-scale field projects to document the stratigraphy on the site, and collect samples for geological and botanical analysis.

Nine years later we are still hard at work. Our research team has swelled to over 15 members from South Africa, England, Israel, Canada, and the United States. Our most exciting result is the dating of the base of the deposit at Wonderwerk to 2 million years ago. The stone tools from this stratum provide the earliest evidence for hominin cave occupation in the world. My job as the conductor of this project is not simply to analyze stone tools, but also to coordinate the activities of all the scientists working at the site. This is a fascinating undertaking, since each member of the team comes to the project with his or her own perspective, and meshing these perspectives is a tremendous challenge. We have also found ourselves involved in ongoing discussions with the local community. Wonderwerk Cave is a candidate for World Heritage status and a critical element of the tourism development in this area. Wonderwerk is also integrated into the local school curriculum, and all children from the area schools visit the site during their primary years. Combining the educational, tourism, and scientific potentials of this site is every bit as complex as the analysis of Earlier Stone Age stone tools. Days at Wonderwerk tend to be a bit unpredictable and are almost always interesting. A day that begins with conversations with local Tswana chiefs might also involve careful excavation and complex discussions of stratigraphy and geophysics. One couldn’t ask for much more. ▲



**FIGURE 1.12** Taking samples for paleomagnetic dating of the early hominin occupation at Wonderwerk Cave, South Africa. Michael Chazan

**CANADIAN research**

**Arctic Explorers of the Nineteenth Century**

The Arctic explorers of the Franklin Expedition were the astronauts of the mid-nineteenth century. Setting out in 1845, the HMS *Erebus* and HMS *Terror* ventured into a forbidding environment that Europeans thought of as the ultimate unknown. The expedition ended not in the triumphant discovery of the Northwest Passage, but in tragedy, with all hands lost to an unknown fate.

In 1981, Owen Beattie of the University of Alberta began a project combining methods from archaeology and forensics to untangle the mystery of the fate of the Franklin Expedition. Beattie and his colleagues disinterred the frozen corpses of three sailors who died early in the voyage of the expedition. The analysis of these bodies, together with a collection of artifacts left behind by the expedition, cast a chilling new light on the fate of these explorers.

When he analyzed bone, tissue, and hair samples, Beattie found that they held highly elevated levels of lead; these men were suffering from lead poisoning. They probably did not die from the lead poisoning, but this affliction would have left them vulnerable to pneumonia and other diseases. The source of the lead was the seemingly innocuous lead solder that had been applied to the insides of the tin cans the expedition had used to carry its provisions. Beattie suggested that lead poisoning contributed to the weakening of the crew, ultimately leaving them unable to survive the rigours of the Arctic environment. ●

REFERENCE: Owen Beattie and John Geiger. 1998. *Frozen in Time: The Fate of the Franklin Expedition*. Vancouver: Greystone Books.





## A Final Note

Australian aboriginal societies speak of the *dreamtime* as the time when their ancestors walked the land. The actions of ancestors are inscribed in the land and experienced in the landscape. Archaeology explores the “scientific dreamtime”—the time of our ancestors that we discover through archaeological research. This book is an introduction to the current state of archaeology. It is not a simple catalogue of finds, but rather an attempt to give coherence to the vast expanses of human experience studied by archaeologists. Our hope is that readers will keep in mind the uncertainty that characterizes the study of prehistory. What is meant by “uncertainty”? Archaeology is a constant process of questioning and improving our understanding of the past. As in any science, all claims can and should be questioned. Archaeology is a report on the current state of the human endeavour to understand our own past. We invite you to join this endeavour, in which we reveal the present state of archaeological knowledge and introduce you to the methods used to gain that knowledge. We hope that these tools will enable you to actively engage in thinking about humanity from the perspective of archaeology, to think about processes that stretch over millennia and are global in scale, and to walk the pathways of our own “scientific dreamtime.”

## Support for Instructors and Students

The following teaching and learning resources are available to enhance the experience of both instructors and students.

- **MySearchLab with eText**

A website that provides engaging experiences that personalize learning, MySearchLab contains an eText that is just like the printed text. Students can highlight and add notes to the eText online or download it to an iPad or Android tablet. MySearchLab also offers self-grading practice quizzes; discipline-specific media and readings; access to a variety of academic journals, and Associated Press news feeds; along with a wide range of writing, grammar, and research tools to help hone writing and research skills.

- **Instructor’s Resource Manual**

For each chapter in the text, this valuable resource provides a chapter outline, preview questions, lecture topics, research topics, and questions for classroom discussion.

- **Test Item File**

The test bank includes between 75 and 100 questions per chapter in four formats: multiple choice, true/false, fill-in-the-blank, and essay questions. The Test Item File is also available online through Pearson Canada’s MyTest platform.

- **MyTest**

This is an online tool that allows instructors to create their own personalized exams, edit any or all of the existing test questions, and add new ones. Other special features of this program include random generation of test questions, creation of alternate versions of the same test, scrambling question sequences, and test previews before printing.

- **PowerPoint® Presentations**

These PowerPoint slides combine text and graphics for each chapter to help instructors convey archaeological principles in a clear and engaging way.



Most of these instructor supplements are also available for download from a password-protected section of Pearson Canada's online catalogue ([vig.pearsoned.ca](http://vig.pearsoned.ca)). Navigate to your book's catalogue page to view a list of supplements that are available. See your local Pearson representative for details and access.

- **CourseSmart for Instructors**

CourseSmart goes beyond traditional expectations, providing instant, online access to the textbooks and course materials you need at a lower cost for students. And even as students save money, you can save time and hassle with a digital eTextbook that allows you to search for the most relevant content at the very moment you need it. Whether it's evaluating textbooks or creating lecture notes to help students with difficult concepts, CourseSmart can make life a little easier. See how when you visit [www.coursesmart.com/instructors](http://www.coursesmart.com/instructors).

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- **peerScholar**

Firmly grounded in published research, peerScholar is a powerful online pedagogical tool that helps develop your students' critical and creative thinking skills. peerScholar facilitates this through the process of creation, evaluation, and reflection. Working in stages, students begin by submitting a written assignment. peerScholar then circulates their work for others to review, a process that can be anonymous or not depending on your preference. Students receive peer feedback and evaluations immediately, reinforcing their learning and driving the development of higher-order thinking skills. Students can then re-submit revised work, again depending on your preference. Contact your Pearson representative to learn more about peerScholar and the research behind it.



## Acknowledgments

In writing this book, I have drawn on practically every experience I have had as an archaeologist. First, I would like to thank some of my teachers. The late James Sauer taught me much of what I know about pottery and showed me that archaeology has the potential to build bridges across the chasms produced by conflict. Andrew Moore and Frank Hole supported me as I stepped out of the classroom and into research and provided me with the freedom that I now try to give my own students. Learning to be an archaeologist takes place in the field as much as in the classroom. I have had the opportunity to work with project directors who somehow had the patience to put up with a novice. I am very grateful to Avi Gopher, Nigel Goring-Morris, and François Valla for teaching me how to excavate a Neolithic site; to Ofer Bar-Yosef, Liliane Meignen, and Bernard Vandermeersch for showing me why the Paleolithic is fascinating; and to Mark Lehner for the incredible experience of working at the Giza pyramids. I would also like to thank my friend Zahi Hawass for making it possible for me to work in Egypt.

My views of archaeology have been greatly enriched by my association with research groups in France and Israel. Catherine Pèrles warmly welcomed me into the Prehistory and Technology Research Group of the Centre Nationale de la Recherche Scientifique in Meudon, outside of Paris. During my year at Meudon, I learned from researchers Eric Boëda, Anne Delagnes, Jacques Pelegrin, and Valentine Roux, among others, how to look at technology as an aspect of human behaviour. In Jerusalem, I have long enjoyed a connection with faculty at the Hebrew University, where I have been welcomed by Na'ama Goren-Inbar, Anna Belfer-Cohen, Erella Hovers, and Nigel Goring-Morris. Most recently, I have developed a number of collaborative projects with colleagues, including Francesco Berna, James Brink, Joel Janetski, Paul Goldberg, Liora Kolska-Horwitz, Ari Matmon, Hervé Monchot, David Morris, and Naomi Porat, among others. I thank them for their patience, as I sometimes have had to balance my responsibilities to these projects with the excitement of writing this book.

I have been lucky to find an ideal home in the city of Toronto and wonderful colleagues and students at the University of Toronto. Much of this book stems from the courses that I teach at the university, as well as from courses I taught at Tufts and Brandeis before coming to this city. The dynamism of the University of Toronto is built on an appreciation of diversity that I hope is reflected in the book. I am particularly grateful to the graduate students who have worked with me including Carla Parslow, Alexandra Sumner, Sarah Stewart, Emma Humphrey, Jayne Wilkins, and Danielle Macdonald.

The actual process of developing the first U.S. edition was facilitated by the people at Allyn & Bacon, who believed that we could pull off the project. I never imagined the amount of effort that goes into such a book. I want to thank Jennifer Jacobson, who shepherded me through that first edition with a skill that combined patience and enthusiasm.

I would like to thank the team at Pearson Canada for making the third Canadian edition of this book happen: Joel Gladstone, Sponsoring Editor; Paul Donnelly, Senior Developmental Editor; Marissa Lok, Project Manager; Lila Campbell, Copy Editor; and Daniela Glass, Permissions Project Manager.

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Pamela R. Willoughby, University of Alberta

Since *World Prehistory and Archaeology: Pathways Through Time* is used as a course text, I hope that instructors and students may wish to contact me. I would appreciate receiving questions, comments, and criticisms at [mchazan@chass.utoronto.ca](mailto:mchazan@chass.utoronto.ca).

I would like to take the opportunity to thank my parents, who have been a constant source of inspiration and support. I am delighted to have shared this project with my wife, Michelle Fost, and our children, Gabriel and Nathan. This has been, in every sense, a team effort.

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## ABOUT THE AUTHOR

**M**ichael Chazan is an Associate Professor in the Department of Anthropology and the Director of the Archaeology Centre at the University of Toronto. He earned his Ph.D. in anthropology at Yale University. Before coming to Toronto, Dr. Chazan was a postdoctoral fellow with the *Centre National de la Recherche Scientifique* in Paris and at the Hebrew University in Jerusalem. Among his field experience are excavations in New Jersey, France, Israel, Jordan, Egypt, and South Africa. Dr. Chazan's publications include a monograph on the Lower Paleolithic site of Holon, Israel, co-authored with Liora Kolska-Horwitz. Dr. Chazan is currently engaged in a project on the Earlier Stone Age of South Africa. The project pulls together an international team of researchers to study a series of spectacular sites located in the Northern Cape Province.



# PART ONE

## THE PAST IS A FOREIGN COUNTRY: GETTING FROM HERE TO THERE

INTRODUCTION QUESTIONS OF TIME AND ETHICS

CHAPTER 1 GETTING STARTED IN ARCHAEOLOGY

CHAPTER 2 PUTTING THE PICTURE TOGETHER

**A**rchaeology is the study of the human past through the traces of the past that exist in the present. After reading this introduction, you should understand:

- The structure of the discipline of archaeology.
- The fundamental elements of archaeological ethics.



## Introduction: Questions of Time and Ethics

*The thing the Time Traveller held in his hand was a glittering metallic framework, scarcely larger than a small clock, and very delicately made. There was ivory in it, and some transparent crystalline substance. "This little affair," said the Time Traveller, resting his elbows on the table and pressing his hands together above the apparatus, "is only a model. It is my plan for a machine to travel through time." (Wells [1895] 1984, 39)*

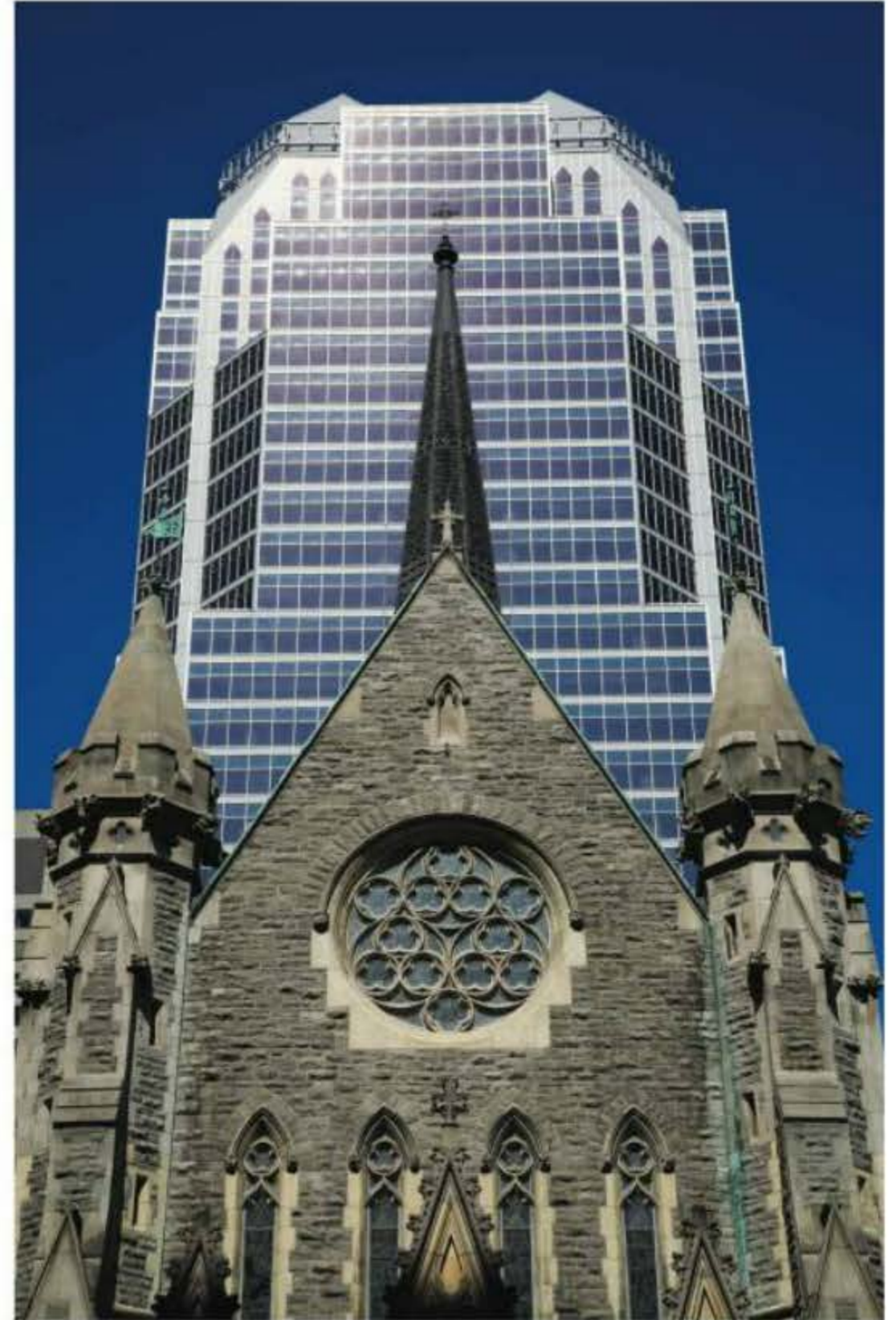
Time travel, as imagined by H. G. Wells in his visionary novel *The Time Machine* and by others in countless subsequent films and books, remains a tantalizing impossibility. We cannot climb into the saddle of an apparatus, or for that matter the seat of a DeLorean, that will whisk us back in time. We are rooted firmly in the present.

Archaeologists have developed a solution to the problem of time travel that is every bit as intricate as the mechanism built by Wells's hero. Archaeological excavation and analysis is a highly developed scientific discipline that allows us a means of access to the human past. Archaeology does not take us into the past, but enables us to read the traces of the past that exist with us in the present.

A simple "thought experiment" can give a sense of how archaeology works. Imagine a building that you are familiar with, perhaps your family home or a school you have attended. Picture how this structure looks today, and then attempt to remove any elements that were added in the past 20 years. If the building is old, try pushing back 40, 60, or even 100 years. Now extend your view to encompass a larger landscape, perhaps a neighbourhood or a town. Although we cannot re-enter the past, we are surrounded by its material traces. Uncovering and understanding these traces is the archaeologist's task (Figure I.1).

Because archaeological remains can take many forms—objects made or modified by people, organic material, geological features—the discipline of archaeology is diverse. As a result, archaeology is often found spread across academic disciplines. In Canada, archaeology is considered a subfield of anthropology, and departments of archaeology are rare. The University of Calgary, Memorial University, and Simon Fraser University are notable examples where there are Departments of Archaeology in Canada. Anthropologists study the diversity of human experience, and archaeology provides an important bridge between biological anthropologists and anthropologists studying modern society and culture. Archaeology also provides time depth and gives a clear material focus to anthropology. Archaeologists working on the ancient civilizations of Mesopotamia, Egypt, and the biblical world are often found in departments of Near or Middle Eastern studies, while archaeologists of classical Greece and Rome are usually in departments of classics or art history. Archaeologists are also employed as curators in museums.

Archaeologists today tend to work outside of the university or museum setting. In Canada, most professional archaeologists are employed by private companies, dedicated to excavating and surveying areas in advance of impending construction. This type of archaeology, usually referred to as cultural resource management, or CRM, is critical to preserving our heritage in the face of development. CRM is increasingly a global enterprise and includes firms that operate internationally. Other archaeologists work in various branches of the government, particularly Parks Canada. Archaeologists working in the public sector play a critical role in both the preservation and the presentation of cultural heritage (Figure I.2). Archaeologists have also begun to find employment in law enforcement, interdicting illegally traded artifacts and halting illegal excavation. Finally,



**FIGURE I.1** In Montreal, Christ Church Cathedral, built in 1859, stands in stark contrast to the surrounding modern city.

*Image Source/Getty Images.*





**FIGURE I.2** A CRM excavation near Toronto Pearson International Airport. ASI.

archaeologists contribute to the development of methods of forensic science and remain active in projects documenting crime scenes, both on the local level and internationally in conjunction with investigations of war crimes.

Training in archaeology is based on a combination of university course work and practical experience. Most professional archaeologists have advanced training, at least at the master's level. Archaeological research is expensive, supporting both the process of excavation and the scientific analysis of the recovered materials. For CRM firms, the costs of excavation are paid by the landowner, as required by law. In most cases, the firm has to bid for a contract, the terms of which bind and limit

the firm. Academic and museum-based archaeologists have the luxury of pursuing projects that develop from a program of research rather than from the imperatives of development. However, to pursue research, it is necessary to raise funds from government and private agencies. In Canada, the Social Sciences and Humanities Research Council provides significant funding for archaeological research.

Archaeology is a varied field of study, and archaeologists follow a range of career paths. However, the discipline is bound both by shared methods and interests and by a shared ethic. Archaeologists have recently begun to recognize the importance of exploring and codifying archaeological ethics (Figure I.3). The Register of Professional Archaeologists (RPA) was founded in 1998 as a listing of archaeologists with both graduate training and practical experience who agree to abide by an explicit code of conduct and standards of research performance ([www.rpanet.org/](http://www.rpanet.org/)). The Society for American Archaeology has set out the following eight principles of archaeological ethics (Reproduced by permission of the Society for American Archaeology from the SAAweb, at <http://www.saa.org/publicftp/PUBLIC/resources/ethics.html>):

- **Stewardship.** The archaeological record is irreplaceable, and archaeologists are responsible for acting as stewards, working for long-term conservation and protection of the archaeological record. Stewards are caretakers and advocates who work for the benefit of all people. The archaeological record includes archaeological materials, sites, collections, records, and reports.



**FIGURE I.3** In Jerusalem, the close juxtaposition of the sacred remains of the past and the modern city creates a landscape fraught with tension, highlighting the ethical dimension of archaeology.

ANNIE GRIFFITHS BELT/National Geographic Stock.

- **Accountability.** Archaeologists are accountable to the public and must make an effort to consult actively with all groups affected by their research.
- **Commercialization.** Archaeologists should discourage and avoid the enhancement of the commercial value of archaeological objects, particularly those not curated in public institutions or those inaccessible to the public.
- **Public Education and Outreach.** Archaeologists should reach out to and cooperate with interested members of the public.
- **Intellectual Property.** Original materials and documents from archaeological research should not be treated as personal possessions. After a limited and reasonable time, these materials should be made available to others.



- **Public Reporting and Publication.** Knowledge gained from archaeological research should be published within a reasonable length of time to a wide range of interested publics. If necessary for the preservation of a site, its location and nature may be obscured in publications.
- **Records and Preservation.** Archaeologists should actively work for the preservation of archaeological records and reports.
- **Training and Resources.** Archaeologists must have adequate training, facilities, and support before carrying out research.

The Canadian Archaeological Association has developed a detailed framework for ethical conduct pertaining to aboriginal peoples ([www.canadianarchaeology.com/ethical.lasso](http://www.canadianarchaeology.com/ethical.lasso)). Three principles are laid out regarding the excavation of sacred sites:

- To recognize and respect the spiritual bond that exists between aboriginal peoples and special places and features in the landscape.
- To acknowledge the cultural significance of human remains and associated objects to aboriginal peoples.
- To respect protocols governing the investigation, removal, curation, and reburial of human remains and associated objects.

Archaeologists study the past, but they work for the present and the future. Although we are motivated by the excitement of discovery, we are also compelled by the importance of conservation. The practical decision of how much of a site to excavate offers an example of maintaining a balance between exploration and conservation. While archaeologists might like to clean out every nook and cranny of a site as they search for critical pieces of data, such an approach is acceptable only in situations where the site faces imminent destruction. In all other cases, the desire to explore is tempered by the imperative of leaving material for future generations of archaeologists who may arrive with new methods capable of unlocking aspects of the archaeological record that are inaccessible today.

From Indiana Jones to Lara Croft, archaeologists have become popular movie heroes. The irony is that the reality of archaeology is much closer to moviemaking than to the exploits of a movie hero. Like making a film, archaeology involves the logistics of working with a team on location, for long hours, and with an eye toward pragmatic compromise. Like filmmakers, archaeologists do a great deal of unglamorous pre- and postproduction work. Archaeology calls less for bravery in battle than it does for the courage to take creative leaps based on intuition. The result of archaeological research is not triumphantly grasping a trophy, but rather reaching conclusions that open an entirely new vista of questions.

## SUMMARY

- Because archaeological remains can take many forms, including objects made or modified by people, organic material, and even geological features, the discipline of archaeology is highly varied.
- In the United States and Canada, the academic discipline of archaeology is usually found in departments of anthropology, as well as in departments of Near or Middle Eastern studies, classics, and fine arts.
- Most archaeologists today work outside of academia, in either cultural resource management firms or government agencies.
- Archaeological ethics are based on the idea that archaeologists should act as stewards of the archaeological record.

## REVIEW QUESTIONS

1. Can you think of a place you are familiar with where the physical remains of the past are apparent?
2. How does stewardship of the archaeological record differ from ownership?
3. In what ways do archaeologists work for the future?