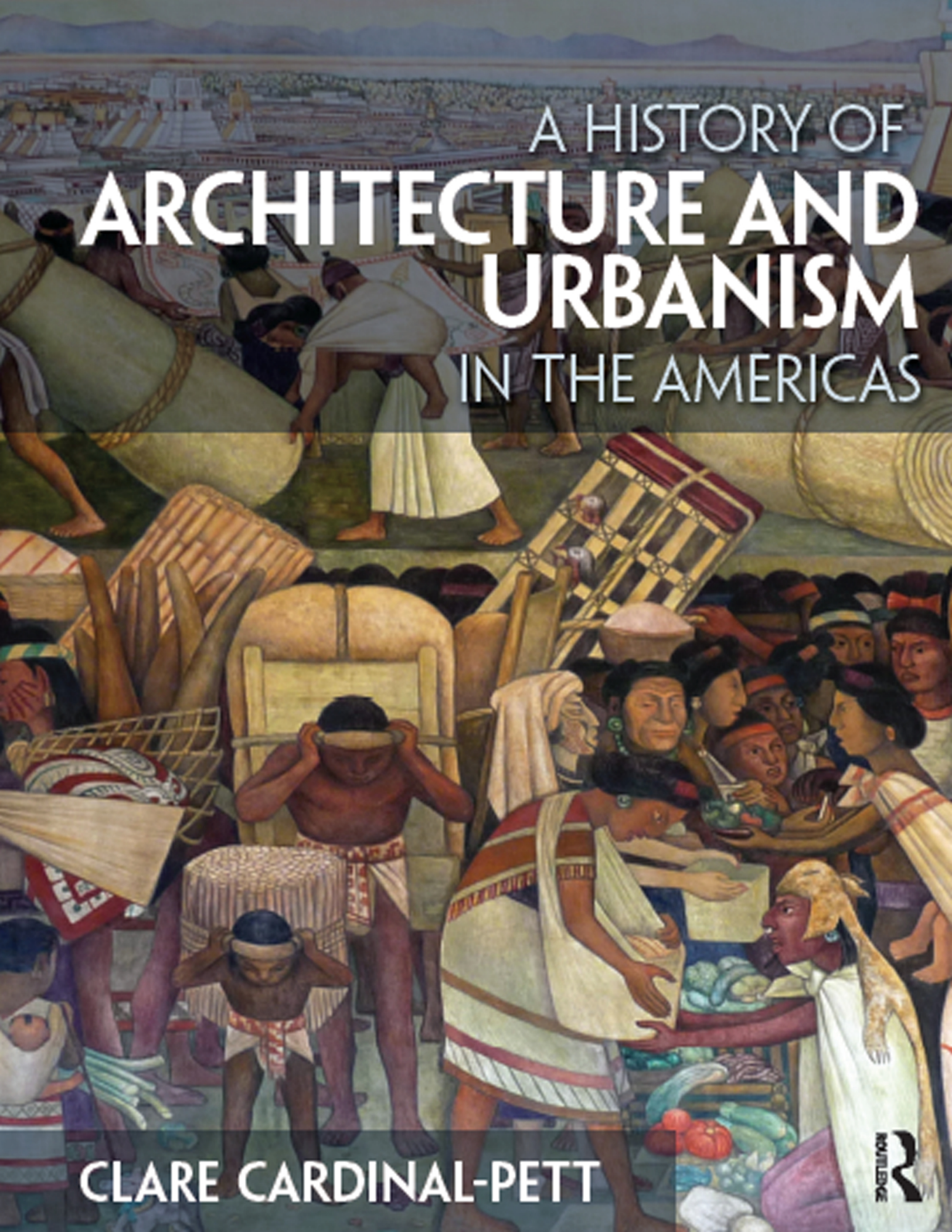
A HISTORY OF
ARCHITECTURE AND
URBANISM
IN THE AMERICAS
CLARE CARDINAL-PETT
ROUTLEDGE

A HISTORY of ARCHITECTURE and URBANISM in the AMERICAS

A History of Architecture and Urbanism in the Americas is the first comprehensive survey to narrate the urbanization of the Western Hemisphere, from the Arctic Circle to Antarctica, making it a vital resource to help you understand the built environment in this part of the world. The book combines the latest scholarship about the indigenous past with an environmental history approach covering issues of climate, geology, and biology, so that you'll see the relationship between urban and rural in a new, more inclusive way.

Author Clare Cardinal-Pett tells the story chronologically, from the earliest known human migrations into the Americas to the 1930s, to reveal information and insights that weave across time and place so that readers can develop a complex and nuanced understanding of human-made landscape forms, patterns of urbanization, and associated building typologies. Each chapter addresses developments throughout the hemisphere and includes information from various disciplines, original artwork, and historical photographs of everyday life, which—along with numerous maps, diagrams, and traditional building photographs—will train your eye to see the built environment as you read about it.

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Clare Cardinal-Pett is an Associate Professor of Architecture at Iowa State University, USA.

"Drawing on recent scholarship in environmental, migration, and economic history, this ambitious, well-illustrated survey asks vital questions about the uses and meanings, evolving and enduring, of buildings and urban forms in the Americas. Cardinal-Pett's balanced, comprehensive treatment of sites both ancient and modern, northern and southern offers a new framework for teaching American architectural history."

—Keith Eggener, Department of the History of Art and Architecture, University of Oregon, USA

"*A History of Architecture and Urbanism in the Americas* is the first holistic and integrated survey of the architecture of the Western Hemisphere. It provides the reader with a global perspective on indigenous architectural traditions and the complexity of cultural interactions and historical developments which define the Americas from prehistory to the present. Its breadth and use of innovative theoretical approaches will serve as a model for further regional studies within the field of architectural history."

—Thomas Gensheimer, Department of Architectural History, Savannah College of Arts and Design, USA

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Clare Cardinal-Pett

Routledge
Taylor & Francis Group
NEW YORK AND LONDON

First published 2016
by Routledge
711 Third Avenue, New York, NY 10017

and by Routledge
2 Park Square, Milton Park, Abingdon, Oxon OX14 4RN

Routledge is an imprint of the Taylor & Francis Group, an informa business

Library of Congress Cataloguing in Publication Data

Cardinal-Pett, Clare.

A history of architecture and urbanism in the Americas / Clare Cardinal-Pett.

pages cm

Includes bibliographical references and index.

1. Architecture and society--America--History. 2. Urbanization--America--History. I. Title.

NA2543.S6C349 2016

720.1'03--dc23

2015014484
ISBN: 978-0-415-53492-5 (hbk)
ISBN: 978-0-415-53493-2 (pbk)
ISBN: 978-1-315-69181-7 (ebk)

Acquisition Editor: Wendy Fuller
Editorial Assistant: Grace Harrison
Production Editor: Ed Gibbons

Typeset in Univers by
Servis Filmsetting Ltd, Stockport, Cheshire

Contents

For my husband, with love.

Acknowledgments

This project would not have been possible without the contributions of my friend and colleague, Jorge René Rodriguez. The original illustrations for the book are his work, much of which was produced long after his official status as my research assistant at Iowa State University ended. Jorge also helped track down many sources for content and imagery and served as my most important intellectual companion during the writing process. Jorge is a talented graduate of the Master of Architecture program at Iowa State University and the Bachelor of Architecture program at Pontificia Universidad Católica in Santiago, Chile.

Special thanks to Iowa State University, particularly Dean of the College of Design Luis Rico-Gutierrez, whose support and enthusiasm was crucial. The Provost's Office, the College of Design, and the Department of Architecture all provided assistance in the form of funding and time. I am grateful for the encouragement and support from Marwan Ghandour, the Associate Dean of the College of Design at the time, and the Architecture department chairs under whose tenure this project was conducted, Gregory Palermo and Deborah Hauptmann.

I must also thank my many students over the years who have witnessed the gathering of the material for this book in my various history surveys and seminars. The idea for this book came from my own need to fill the void in the literature available for teaching a more comprehensive story of architecture and urbanism in the Americas.

Several of my colleagues at Iowa State University and around the world all deserve special mention here. Thanks to Ulrike Passe for introducing me to Wendy Fuller, the commissioning editor for Routledge who guided the conceptual development of this book. And thanks to Monica Haddad, Ivonne Santoyo-Orozco, Silvina López-Barrera, Jamie Horwitz, Kimberly Zarecor, Jason Alread and Karen Bermann for advice and encouragement. I must also thank Cristina Dreifuss-Serrano, Silvia Ramirez Gonzalez, Luis Hernán Sáenz, Maria Paula Gonzalez Bozzi, and Natalia Silva Mora, who have served as my guides to the architecture and urbanism in Peru and Colombia.

Many thanks to all those wonderful, interesting people that I encountered in cyberspace during my search for images to include in this book—some of whom I had the pleasure of talking to over the phone and some of whom I hope to actually encounter in person some day. I am forever grateful to Hermes Mallea, author of *Great Houses of Havana*, for his generosity. Others who freely contributed images include Charlotte Eckland, Carsten ten Brink,

Jack Corbo, Vinícius Paciello, Eva Lewitus, and Frank Coronado. I need to thank the staff at all the numerous archives I worked with for their patience and attention. A special thanks to Laura Alemán, Professor of Architectural History and Executive Director of the Institute of Architectural History, University of the Republic, Montevideo, Uruguay.

And, finally, to the anonymous reviewers and Routledge staff who helped to make this book better at every step of the way, especially Wendy Fuller and Rebecca Brennan who got the manuscript off the ground and to Grace Harrison, whose guidance during its final preparations kept me going on a daily basis. I don't think I could have survived the end game without her optimism. Many thanks to the production editor Ed Gibbons for his infinite patience.

I should also offer a thank you and an apology to my family and friends who put up with this project. Thank you all. I'm very sorry it took so much longer than we all imagined. To my mother, who thought the work would never end—it is finally finished.

Introduction

This history of architecture and urbanism in the Americas is necessarily partial. The frame of reference for any story cannot reach too high and wide without losing sight of the details. The American story stretches from the Arctic Circle to the Tierra del Fuego, creating an especially difficult challenge. The perspective from one extreme or the other usually never makes it past the Equator, as if the tangent to the curvature of the globe were some invitation to ignore the reality at the scale of the local: the surface of the earth is one continuous space. The same predicament exists for historians concerned with relationships between east and west: it takes much imagination to see it all at once.

This book attempts to tell the story of building the Americas differently. Embracing both north and south, this narrative emphasizes new details and offers some new perspectives. The repressed and forgotten dimensions of American buildings, cities, and landscapes are reconsidered. The indigenous past is unearthed and given a place in the present. Contributions by the continents' myriad immigrants and migrants are revisited in light of more recent scholarship. Inspired by developments in environmental history, this book privileges more issues of climate, geology, and biology than is usual. The relationship between urban and rural is reworked. The book is an attempt to help students, teachers, and the general reader to address the building of the Americas with a fresh and more inclusive bearing.

While I acknowledge the necessity to reframe the history of environmental design as a global story, I believe this focus on the Western Hemisphere makes a unique and useful contribution to that bigger picture. For example, while most general histories of the world now describe the origin of agriculture—certainly one of humanity's essential tools of urbanization—as a polycentric phenomenon that emerged independently in at least four places on earth, the earliest developments are usually assumed to have been located in the so-called "Fertile Crescent," along the Tigris and Euphrates rivers, appearing about 10,000 years ago. Mesoamerican agriculture, another early independent center, typically appears much later in most histories—sometimes as much as 5,000 years later.[1]

Consequently, most narratives of the beginnings of global urbanization start in that Fertile Crescent, usually leaving the Americas out of the story until much later, often until 1492 when the continents were first "discovered" and their histories rewritten by European colonizers. Recent archaeological evidence now pushes the origins of agriculture in Mesoamerica back to coincide with developments in Eurasia.[2] Shouldn't we now be asking where

the story of world cities ought to begin? The narrative, at the very least, should attempt a polycentric structure.

In 1519, when Cortez's army arrived in the Valley of Mexico, approaching the Aztec capital city of Tenochtitlán, the Iberians were amazed:

> And when we saw all those cities and villages built in the water, and other great towns on dry land, and that straight and level causeway leading to Mexico [i.e., Tenochtitlán], we were astounded. These great towns and cues [i.e., temples] and buildings rising from the water, all made of stone, seemed like an enchanted vision from the tale of Amadis. Indeed, some of our soldiers asked whether it was not all a dream . . . It was all so wonderful that I do not know how to describe this first glimpse of things never heard of, seen or dreamed of before . . .
>
> And when we entered the city of Iztapalapa, the sight of the palaces in which they lodged us! They were very spacious and well built, of magnificent stone, cedar wood, and the wood of other sweet-smelling trees, with great rooms and courts, which were a wonderful sight, and all covered with awnings of woven cotton.
>
> When we had taken a good look at all this, we went to the orchard and garden, which was a marvelous place both to see and walk in. I was never tired of noticing the diversity of trees and the various scents given off by each, and the paths choked with roses and other flowers, and the many local fruit-trees and rose-bushes, and the pond of fresh water. Then there were birds of many breeds and varieties which came to the pond. I say again that I stood looking at it, and thought that no land like it would ever be discovered in the whole world . . . But today all that I then saw is overthrown and destroyed; nothing is left standing . . .[3]

At the beginning of the 16th Century, the Valley of Mexico was one of the most sophisticated urban areas in the world and the metropolitan population was larger than Paris, Europe's greatest city. While population numbers in the Americas were certainly much slower to reach levels on par with the rest of the world and the areas of urbanization were fewer for much longer, the isolated urban evolution of Mesoamerica was comparable, even superior to most. Many historians believe that Spain's first encounter with the Aztec capital and the vivid reports back to Europe had a strong influence on Renaissance city planning. And, indeed, the rebuilding of Tenochtitlán as Mexico City was founded in—if not inspired by—the spatial relationships already inscribed in the valley by centuries of inhabitation by various indigenous cultures.

So this narrative begins in many places at once—both in terms of geography and of ways of looking at the past—setting the stage for a more complete version of the human impact on the Western Hemisphere. "Origins" summarizes what is known about the first American people, where they came from and how they first occupied parts of the continents. "Settings and Settlements" offers a more detailed look at the geographical and cultural diversity of the various early population centers, with a special emphasis on agriculture and other forms of anthropogenic landscapes that developed before 2000 BCE. "Early Urban Realms and Ideological Landscapes" outlines the first mature city-states and

complex interaction spheres. "Cities, States and Empires" establishes a basic understanding of the primary indigenous cultures and associated architectural forms that characterized the Americas before the first European and African immigrants arrived.

"Patterns of European Colonization and Building" addresses the initial period of colonial occupation by the Spanish, Portuguese, French, British, and Dutch. The chapter identifies key differences among these five important European powers and traces some of the intriguing web of mutual influences among them. This chapter also establishes a history for the African peoples who played a complicated role in the European race to dominate world trade. The content of this chapter refers to some important Middle Eastern and Asian technologies and commodities that provided both the means and the motivation for European expansionism in the 15th and 16th Centuries.

The architecture and infrastructure established to support colonial empires in the Americas anchors "Key Colonial Towns and Regional Architectural Elements." The time period focuses on the 18th Century. While this chapter addresses typologies such as ports, mines, administrative centers, fortifications, plantations, homesteads, and missions, it also examines the impact of these developments on the architectural and urban legacy of indigenous cultures. By including details of the resistance to, as well as the assimilation and active collaboration of indigenous people and enslaved Africans into the colonial enterprise, this chapter creates a much more complex understanding of the formation of hybrid cultures and forms discussed later throughout the book.

Changes provoked by the disintegration of colonial governments and their power over local and regional places defines the main content of "Architecture and Identity." The beginning of the 19th Century is marked with opportunity and challenge across the Americas. The search for identity provokes innovation in many different contexts. Federal districts are defined and religious buildings take on new significance. Many people from many parts of the world define a complex set of demographics, including mixed racial and ethnic groups whose patterns of everyday life mirror this diversity.

Regional differences intensify during the 19th Century, as former colonies aspire to become independent nation states. New building typologies demanded by global industrialization aggressively inflect the historic colonial city. Railroad stations and factories are built. Patterns of uneven economic development and political progress emerge. "Transportation and Industrialization" introduces these changes, and "Beautiful Cities and New Technologies" follows up with an examination of Belle Epoque palaces and skyscrapers as well as an investigation of building technologies and the status of urban infrastructure across the hemisphere at the turn of the century. A discussion of urban parks creates a particularly interesting opportunity to re-situate cities in the context of global urban design theories and the various impacts of design professionals across the Americas.

"Varieties of Modernity" addresses the multiple responses to dramatic events of the early 20th Century and sets the stage for understanding extremely different trajectories among the various American nation states struggling to establish political and economic viability in an unstable global context. The "International Style" is discussed in the context of other searches for modern urban and architectural form. The idea of Pan-Americanism and variations on themes of indigenous origins present an American counterpoint to the traditional

narrative of Western European architecture. And, finally, an epilogue, "Futurama," sets our course for what is to follow during the remainder of the 20th Century—a century dominated by the industrial and military reach of the USA. Our story ends just as the automobile begins to take command of city and country. While we all know how that turned out, at the beginning of the century that future seemed like something only possible in the movies.

Throughout these chapters, general economic and social history creates the context for building. The work of professional designers and engineers is considered as both consequence and cause of more general patterns of urbanization. While this book does acknowledge some elements of relatively autonomous intellectual histories created by design academics, it does not anchor its concerns in those canons or debates. Instead, the artifacts and developments this book chooses to highlight are treated as part of the general record of human history in the Americas and my sources of information are wide-ranging—from science to science fiction. Nevertheless, the history of architecture and urbanism as written by others does play an important role in shaping this narrative. I am indebted to many scholars, without whose research this book would not have been possible. My approach is at once irreverent and reverent, however, of all those stories we have been telling about what and why we build.

Notes

1 See, for example, Marks, Robert, *The Origins of the Modern World: A Global and Ecological Narrative from the Fifteenth to the Twenty-first Century* (Lanham, MD: Rowman and Littlefield, 2002).

2 See, for example, Cox, Barry and Moore, Peter, *Biogeography: An Ecological and Evolutionary Approach* (New Jersey: Wiley, 2010) p. 425.

3 Diaz, Bernal, *Conquest of New Spain* (New York: Penguin Books, 1963).

Prologue

Origins

P.1
Coastline near Skidegate in the Haida Gwaii Archipelago, British Columbia, Canada

P.3
The Yukon River near Carmacks, Yukon, Canada

P.2
The Grand Canyon, Arizona, Colorado, USA

P.4
Badlands Prairie, South Dakota, USA

P.5
Mississippi cypress swamp, USA

P.6
Playa Riomar, Panama

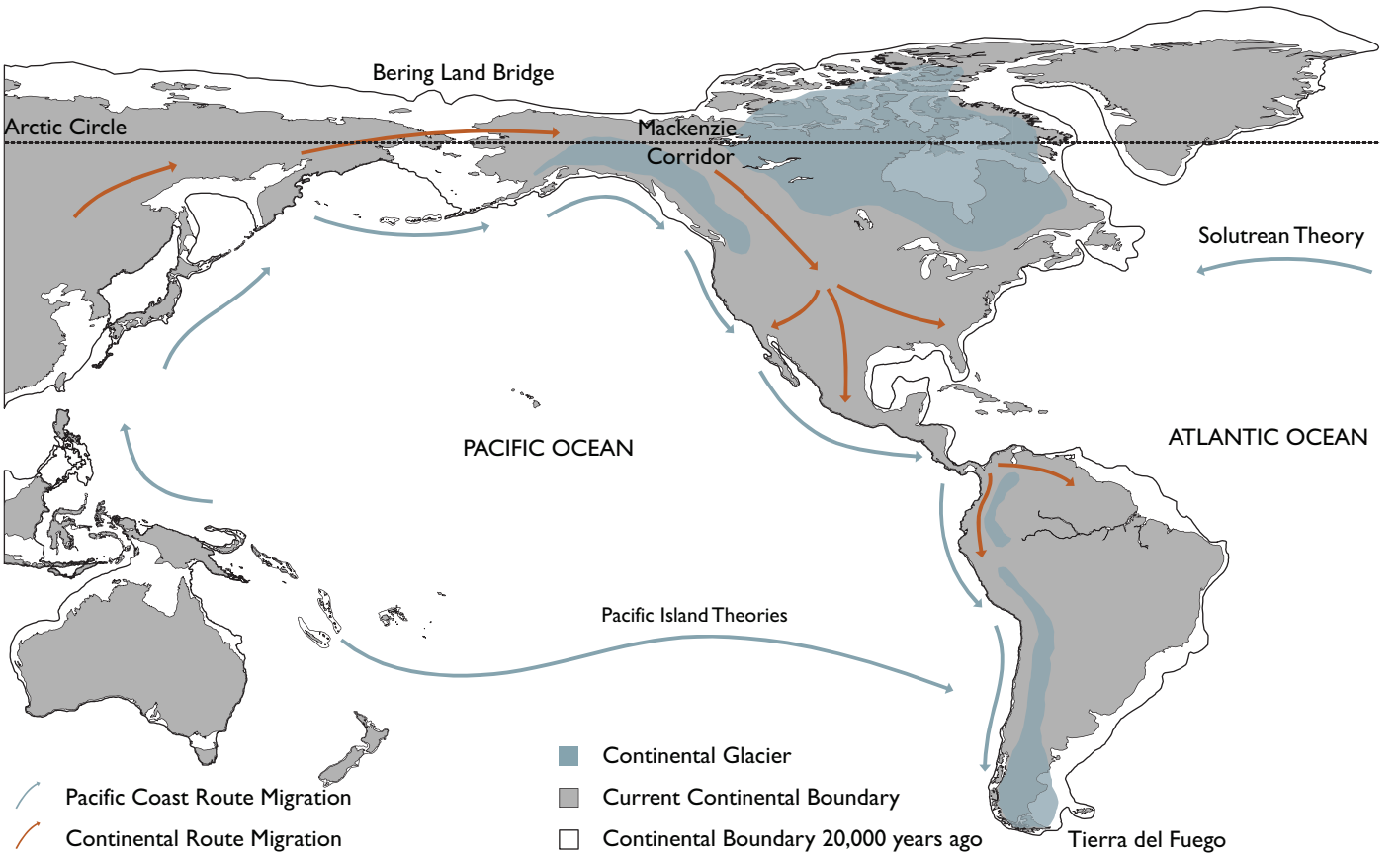
P.7
El Popocatépetl eruption near Mexico City, Mexico

P.8
Iracema Falls, Amazon, Brazil

P.9
Laguna Verde, Atacama, Chile

P.10
Torres del Paine, Patagonia National Park, Chile

This much is known: the first people in the Americas came from somewhere else, perhaps earlier than 25,000 years ago, for sure by 15,000 years ago.[1] And the record of evidence is clear: by 1,000 BCE the full reach of the Western Hemisphere—from the Arctic Circle to the Tierra del Fuego—had been hunted, fished, and planted by many distinct and diverse groups of people. Cities had been built. Landscapes had been shaped to support agriculture, everyday life, and cosmological beliefs. The earliest details of this extraordinary migration, population expansion, and cultural evolution are mostly unknown and the scientific evidence is scant and fiercely debated by archaeologists, anthropologists, and the myriad descendants of the first peoples. Whatever may be eventually discovered and known about the original occupation and manipulation of American landscapes, we can be sure—because we are human—that those first journeys had many motives. Hunger, climate change, social conflict, curiosity, and serendipity all come to mind. Given the distances and environmental extremes, we can also safely assume that these journeys were harrowing, arduous, and, no doubt, sublimely beautiful. Some journeys probably gave enough pleasure, or proved easy enough, that moving on seemed more advantageous than staying put. While wandering still seems to be in the DNA of many Americans, north and south, most of the descendants of those original, restless people who arrived thousands of years ago did eventually settle down and start to build places to support increasingly complex societies.



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Possible migration routes to the Americas

The former land bridge between Asia and North America at the Bering Straits is one source of large numbers of people at some of the earliest known dates. It is believed, and the belief is supported by mitochondrial DNA studies, that the first Americans were from Asia. While the Bering Land Bridge theory is well accepted by many scientists, there are now many reasons to doubt that all immigrants arrived across the land bridge and dispersed throughout the Western Hemisphere by overland routes from north to south. Recent archaeological finds in Chile, Brazil, Venezuela, Mexico, and the United States appear to establish traces of human activity much earlier and much more widely dispersed throughout the Americas than it was once believed. These new dates would make an exclusively land-based migration from what is known as Beringia, near the Arctic Circle, highly unlikely.

One possible additional scenario involves journeys by sea. While there are numerous theories of early water-based migration from Asia, Europe, and even Africa to the Americas, there is no archaeological evidence to date that confirms any of them. The most non-controversial scenario is the Pacific coastal migration theory that assumes people moved from Beringia to points south quickly along the Pacific coast on watercraft. Some theories also propose that people arrived from across the Pacific itself using waterways exclusively. While entirely plausible, even likely, the physical evidence to support these theories has proven difficult to track. The oceans are about 300 feet higher now than 20,000 years ago; areas of

archaeological significance along the coasts have been submerged and scoured by water for thousands of years. Many sites of evidence have been erased by the grinding retreat of glaciers, by people, by climate change, by time itself. Molecular and bio-anthropology and other interdisciplinary efforts that combine data from new disciplines, such as paleo-climatology, with the scant findings of traditional archaeology and physical anthropology promise compensation for these losses. Linguists using statistical techniques borrowed from molecular physics and bioinformatics are tracing cultural evolution and migration through language development—an approach not dependent on physical evidence.[2]

Some of these new research methods have recalibrated population estimates for the Americas prior to 1492.[3] We now know that the numbers of indigenous Americans declined as much as 90 percent by the end of the 18th Century. Most of the decline is now attributed to diseases for which the first people had no immunities. Most European immigrants encountered a depopulated landscape that was, in varying degrees, no longer tended and returning to "the wild." Images of unused and uninhabited forests, grasslands, and mountain ranges set the stage for one of the founding myths of European colonization. Often called the "Pristine Myth,"[4] the idea that there was virgin land for the taking and unclaimed resources needing exploitation created an argument for the expansion of Western Civilization in various frontiers. According to environmental historian Shawn Miller, "the empty American frontier was created, not discovered, by the conquest."[5] The "Pristine Myth" also misdirected early archaeologists looking for traces of human history. Why spend fortunes digging in places no people had ever been?

While new perspectives have redirected scientific research, there are many known areas of scientific interest in the Americas that remain unexamined simply for lack of funding or because working in the area is difficult—physically, politically, or ethically. The ethical dimensions of cultural and physical anthropology are well known points of debate within contemporary communities of first peoples. After more than a decade of protest and political action by various tribes whose burial grounds and other sacred sites had been cleaned out by scholars and artifacts removed to boxes and drawers in scores of natural history museums, in 1990 the United States government passed the Native American Graves Protection and Repatriation Act. Many tribes make no distinction between scholars and the looters who traffic in stolen or illegal artifacts. Yale University's repatriation of artifacts removed from Machu Picchu between 1911 and 1915 by the famous US anthropologist, Hiram Bingham, is only one of many cases in which well meaning but culturally insensitive researchers have disembodied places in attempts to protect their histories. Delicate threads of continuity between then and now are forever lost when cultural artifacts become dislocated in time, space, and place from the practices that give them meaning. Contemporary scholars now understand the mistakes of previous generations but the damage resists repair.

While contemporary tribal groups may be too many generations removed from the very first American languages, customs, and cosmologies to offer significant insight into those earliest histories, their origin stories serve as frames of reference from which to engage the past. Many communities believe these stories are literally true. Outsiders usually refer to such narratives as "myths" and "legends." Later immigrants to the Americas have

formulated many origin stories that frame historical perspectives—some true, some false. The heroic voyage of discovery by Christopher Columbus to prove the earth was round is one such fabrication popularized in the 19th Century by Washington Irving.[6] We are the stories we tell.

For example, the Meadowcroft Rockshelter near Avella, Pennsylvania is a USA National Historic Landmark with a visitors' center that advertises itself as the oldest site of human habitation in North America.[7] This is a controversial claim presented as fact by the site's associated interpretive center. There are numerous other sites where possible evidence of more ancient activity has been found. Although controversial, the rock shelter does offer the possibility that people were living in the area 16,000 years ago. The evidence also supports the belief that the rockshelter, a natural sandstone over-hanging cliff, was continuously occupied for thousands of years, until about 700 years ago. Regardless of its current status among the community of scholars, the Meadowcroft Rockshelter offers an excellent example of contemporary storytelling in the "living history" format. The shelter is open for public viewing alongside the Museum of Rural Life which includes two installations, one a 19th Century colonial village, the other a 16th Century Indian village. The colonial village was built first and has been in operation since 1969 CE. Development of the Indian village started in 2008.

As the archaeological dig has gone deeper into the rockshelter, the story of the people who have passed through the place over the millennia has grown more complex. This National Historic Landmark, like many others, is what USA folklorist and architectural historian Dell Upton calls an "ancestral homeland," an invented place that serves to anchor stories about who we are and where we have come from. Upton's concept also includes "invented traditions, in which the selective recall, exaggeration, and sometimes outright fabrication of traditional practices are used to define a distinctive, territorially based cultural identity for a nation or some fragment of one."[8] Meadowcroft's stories of the first people, their descendants, and the European colonists speak to different audiences but all three versions of the place create histories likely to frame future perspectives.

Challenging Meadowcroft's claim, evidence has been found in bluffs, banks, and flats along the Old Crow River basin, in what is now the Yukon Territory of Canada, that some researchers believe puts people in the area up to 40,000 years ago.[9] Near the Old Crow River, on a ridge above the Bluefish River, archaeologists Jacques Cinq-Mars and Moran discovered three limestone caves that present evidence of human activity in Eastern Beringia at least 25,000 years ago—bone and stone tools and bones with butchering marks. This place was a gathering place, a place to eat. Most anthropologists believe early humans lived out in the open, often along waterways in campsites devoted to butchering animals and eating raw meat and plants. Cooking, so it seems, came later. No signs of a hearth have yet been found in the Bluefish Caves but domestic fires were widespread in other parts of the world well before the time period estimated for the Bluefish bones. Even if there was no fire in this place, the caves surely served as both table and shelter. The Bluefish Caves suggest an origin for architecture in the Americas and, like the beginnings of architecture everywhere else on earth, in the Americas they were first discovered rather than constructed.

Although the migration routes of the first Americans are controversial, the environmental history of the Western Hemisphere during the period of the first arrivals is better documented.[10] Periodic and rapid global warming began about 15,000 years ago, eventually creating an ice-free area from Beringia to the south, allowing migration of people, plants and animals along what is known as the Mackenzie Corridor. As glaciers melted, water ran downhill, ice dams temporarily blocking the flow. Violent bursts of dammed lakes and rivers scoured the earth's surface clean of forests, revising topographies. In open, flat parts of the world, the water rose more gently, first soaking then submerging dry land under vast swamplands and lakes. The Bering Land Bridge eventually disappeared under the rising sea. Any migration over land from northeast Asia into the Americas must have occurred before the great deluge, before 13,500 years ago. The consequences of these environmental changes included ecological disruptions that produced significant extinctions of plant and animal life. Human populations associated with ecosystems altered by climate change either adapted or perished. In the Americas, many species of large mammal and important plants disappeared, forcing new lifestyles on the paleo-Americans. Some anthropologists speculate that this provocative period of environmental history helped initiate the roots of agriculture, prompting a whole new phase of cultural development worldwide.

Anthropologists believe memories of the end of the last Ice Age may have been passed down through oral tradition; many contemporary descendants of the first Americans maintain narratives that seem to describe dramatic events associated with the melt-water pulse. The Haida people have occupied the archipelago along the Pacific coast of what is now British Columbia for thousands of years, likely since the end of the last Ice Age. The Haida may be the oldest traceable culture group in the Americas. Traditional Haida flood stories certainly help us imagine what it must have been like to witness the dramatic transformation of the rugged coastline these people still call home.

> After pulling up stream, he became tired; so, in order to rest, he pulled ashore and lay down. In those days at the place where he went ashore were large boulders in the bed of the stream, while on both sides of the river were many trees. While resting by the river, he heard a dreadful noise up stream, coming towards him. Looking to see what it was, he was surprised to behold all the stones in the river coming toward him. The movement of the stones frightened him so much that he jumped to his feet and ran into the timber. Here he found he had made a mistake, because all the trees were cracking and groaning; all seemed to say to him, "Go back, go back at once to the river, and run as fast as you can." This he lost no time doing. When again at the river, led by his curiosity, he went to see what was crushing the stones and breaking the trees. On reaching them, he found that a large body of ice was coming down, pushing everything before it. Seeing this, he got into his canoe and fled toward home.[11]

Along the long coastlines of the Americas, many possible inhabited areas are now submerged. The general consensus among scientists is that the sea levels are about 300 feet higher now than before the Ice Age ended and that during that time the continental shelf was mostly exposed. In 1993, at the Page/Ladson site in the Aucilla River basin of north

P.12
The spirit of the Haida Gwaii, *The Black Canoe*
Cast bronze sculpture outside the Canadian Embassy in Washington, D.C. by Bill Reid 1986. The traditional cedar dugout canoe is steered by Raven. Other passengers include Grizzly Bear (at the bow), the Shaman (in the center), Wolf, with his teeth in Eagle's wing, Frog (under Eagle) and a small human who represents the stoic oarsman who obeys orders. When asked where the boat and its crew are headed, the artist said, "There is certainly no lack of activity in our little boat, but is there any purpose? Is the tall figure who may or may not be the Spirit of Haida Gwaii leading us, for we are all in the same boat, to a sheltered beach beyond the rim of the world as he seems to be or is he lost in a dream of his own dreaming? The boat moves on, forever anchored in the same place."[12]

Florida, scuba divers located a mastodon tusk with cut marks made by humans as they removed the tusk from the skull. The tusk has been radiocarbon dated to about 12,200 years ago. The site has been well preserved in a protected underwater location and contains many other traces of human activity such as hearths. While these findings do not as yet directly support any Atlantic migration theories, they do cast serious doubt on the exclusivity of the Beringia ice-free corridor narrative and have already provoked discussion about how people from Beringia might have spread out through North America—perhaps southeasterly first, then to the west. Patterns of very early migration within the Americas are still not well understood but are the topic of active research.

The archaeological record after 13,500 years ago presents more substantial evidence of people in the Americas. Traces of human activity have been found in many parts of the Western Hemisphere and many of these traces include similar stone tools. The spear point technology associated with these semi-nomadic hunter-gatherers is now commonly referred to as the Clovis Point. First discovered near Clovis, New Mexico in 1929, and since

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The Past Made Present, **Ken Kirkpatrick 1997**

unearthed at numerous sites across North America, the Clovis findings established a framework for the first comprehensive story about paleo-Americans developed by scientists in the 20th Century. For now, the Clovis findings offer the earliest known evidence of large numbers of people in the Americas. However, the archaeological record is rapidly expanding to include sites in all parts of the hemisphere and to embrace artifacts with confirmed dates prior to the earliest known Clovis points. One interesting dimension of these new findings promises to complicate our understanding of how these people lived. While hunting large mammals was clearly part of everyday life in paleo-America, pursuing smaller game might actually have been more common. And evidence is growing for more widespread consumption of plants and sea life than previously believed. With a greater understanding of local diversity, the big picture of paleo-America has become much more complex. In short, there were more people in more places with greater variations in lifeways.

The archeological record of Clovis technology used to be considered emblematic of the first American culture. These first Americans were assumed to be big game hunters who moved frequently in small groups using sophisticated weapons and clever techniques for tracking or trapping game. That most of these people eventually "settled down" and became farmers once constituted the master narrative. We now assume a much earlier date for proto-agricultural practices and, again, more diversity among all early American cultures in terms of the spectrum of subsistence patterns. Some people, it is suspected, were simply more rooted than others much earlier. The ancestors may not have all wandered so far, constantly chasing the next meal with a carefully crafted spear point. Indeed, there is evidence of more rooted lifestyles in many parts of the hemisphere.

The earliest records of permanent shelters are caves and rock shelters, but these traces may not represent the full array of technological skills. The remains of tent structures found at Monte Verde, Chile suggest some early people must have also adapted boat-building and clothing techniques to the problem of shelter. And in some parts of the Americas, traces of pit dwellings point to very early use of the earth itself as home. The addition of regional, place-based variations to our understanding of early American peoples gives credit to these many different communities for what it now believed to be remarkable skills in environmental adaptation. While the end of the Ice Age and the relatively abrupt environmental changes that global warming produced probably forced the issue, it is now believed that many people in the Americas were quite capable of not only moving on but also of quickly changing their patterns of everyday life. They were also, so it now appears, more diverse than once imagined when they arrived in the Americas and these early divergent cultures had already sowed the seeds for rapid environmental adaptation.

Amid all the speculation and debate about the origins and patterns of migration of the first Americans, one particular question begs for an answer: where did the first Americans bury their dead? Fewer than 50 dated human skeletal remains older than 8,000 years have been found anywhere in the Western Hemisphere. The lack of actual remains constitutes a mystery; the apparent lack of ritual burial sites compounds the conundrum. The lack of evidence does not necessarily mean the dead were left behind out in the open by nomads, with no commitment to particular places, as they moved on—although this is at least one plausible solution to the puzzle. Perhaps we simply do not understand the first Americans'

P.14
Reconstructed pit houses at the Xa:ytem site, occupied at least 5,000 years ago, in the Fraser River Valley near Mission, British Columbia, Canada

attitudes about death and how these notions found expression in the disposal of dead bodies. Perhaps, as Tom Dillehay suggests, "we are looking in the wrong places"[13] and getting to the bottom of this mystery might help resolve many others.

One of the earliest known sets of remains, and suspected burial sites, in the Americas was recently unearthed in Alaska.[14] The bones and teeth of a 3-year-old child, now named Xaasaa Cheege Ts'enlin, were discovered by a team of archaeologists from the University of Alaska led by Ben A. Potter. The team says the date of death was approximately 11,500 years ago. The site is interesting in that the child was found in the context of a domestic environment, in the top layer of a hearth area where other animals had been apparently cooked and eaten. The current assumptions are that the remains, which were burned, represent either a cremation or an instance of cannibalism. The context contains additional evidence of a seasonal dwelling in which the hearth pit figured prominently. The Potter team believes the house was abandoned shortly after the child's cremation, becoming a tomb. Of the earliest forms of architecture, the house and the tomb are most telling aspects of a culture but they are usually identified as distinct archetypes even when the physical record presents reasons for confusion—as this site in Alaska does.

One obvious conclusion to draw from the rarity of very early human remains in the Americas is that the number of first immigrants was very small. Given the light impressions even a few semi-sedentary groups might have had on their environments, the question of whether or not they traveled constantly, without stopping to bury the dead, may prove

impossible to answer. The skeletal remains, along with evidence of ritualized burials, do become much more plentiful after about 10,000 years ago, when there was a worldwide population increase. During the transition to the Holocene era, people had become numerous enough at the tip of South America, in the region known as Patagonia, that they had begun to identify places as special pilgrimage sites. Returning over and over to La Cueva de las Manos, the earliest inhabitants of this area marked a rock shelter with images of animals and people. Spray painting stencils of their hands at the cave entrance with pigments blown through hollow bird bones produced the site's most poetic images. No human remains have been found in the area but the sign of humanity is indelible.

Perhaps we need to imagine other possible relationships between death and landscape among very early peoples in the Americas in order to recognize signs of ritual commemoration in the archaeological record. The first Americans were highly adaptable and, when faced with so many new places and patterns of everyday life, may have temporarily or permanently suspended beliefs and traditions about the dead, ideologies they had carried

P.15
Cueva de Las Manos, Rio Pinturas, Argentina

with them from other times and places. Wherever they came from, whatever cultures they carried with them, the first Americans did not hesitate to reinvent themselves. Novel conditions may have "accelerated invention."[15] If there is one common thread that weaves through the chapters that follow, it is this: from the beginning, Americans have been masters of bricolage.

Notes

1 Unless noted otherwise, all information for this section from *The Settlement of the Americas: A New Prehistory*, by Tom Dillehay (New York: Basic Books, 2001).

2 A good source for learning more about new methods is *The First Americans: The Pleistocene Colonization of the New World*, edited by Nina Jablonski (Berkeley: University of California Press, 2002).

3 See, *1491* by Charles C. Mann (New York: Vintage Books, 2006) for a quick summary.

4 William Denevan coined the phrase, "Pristine Myth," in his article, "The Pristine Myth: The Landscape of the Americas in 1492," in the *Annals of the Association of American Geographers* (Washington DC: Association of American Geographers) Vol. 82 no. 3, 1992, pp. 369–385.

5 Miller, Shawn, *An Environmental History of Latin America* (Cambridge: Cambridge University Press, 2007) p. 10.

6 See, *Inventing the Flat Earth: Columbus and Modern Historians* by Jeffrey Burton Russell (New York: Praeger, 1991) and *A History of the Life and Voyages of Christopher Columbus* by Washington Irving (first published in 1828) and available online through Google Books or the Internet Archive (http://archive.org/details/historyoflifeand01irviiala).

7 See www.heinzhistorycenter.org/meadowcroft.aspx

8 Upton, Dell, *Architecture in the United States* (New York: Oxford University Press, 1998).

9 A complete archaeological report for the Old Crow Basin and Bluefish Caves can be found at the *Taiga Net environmental network* (http://yukon.taiga.net/vuntutrda/archaeol/pleis.htm) retrieved April 2011.

10 See, *The Holocene: An Environmental History* by Neil Roberts (Oxford: Blackwell, 1998).

11 From the story collection of the Canadian Museum of Civilization, available online at: www.civilization.ca/cmc/exhibitions/aborig/haida/happr01e.shtml, retrieved April 2011.

12 As quoted by the Canadian Museum of Natural History online exhibit at www.historymuseum.ca/cmc/exhibitions/aborig/grand/gh04eng.shtml

13 Dillehay, Tom, *The Settlement of the Americas*, p. 234.

14 Potter, B. A., Irish, J. D., Reuther, J. D., Gelvin-Reymiller, C., and Holliday, V. T., "A Terminal Pleistocene Child Cremation and Residential Structure from Eastern Beringia," *Science*, 2011; 331 (6020): 1058 DOI: 10.1126/science.1201581

15 Dillehay, Tom, *The Settlement of the Americas*, p. 234.

1
Settings and Settlements 2000 BCE

1.1
People believed the ruins of Caral in the Supe River Valley on the Pacific Coast of Peru were natural hills before archaeologist Ruth Shady Solis had a hunch to dig in 1994.

Introduction

A great diversity of people, environments, and ways of life has characterized the Americas from the very beginning of its human inhabitation. This chapter begins with a brief discussion of what is known about the environmental history of the early period and a general discussion of ecology, food systems, and social complexity as fundamental facets of urbanism. The chapter highlights the very first urban patterns in the Western Hemisphere: the Norte Chico region of coastal Peru; the Olmec Heartland region of Mesoamerica; and the early mound centers in the lower Mississippi Valley of Eastern North America. The Norte Chico region was the first urban phenomenon in the Americas. Like its later counterparts in Mesoamerica and in the Mississippi Valley, the Norte Chico was not one isolated "city" but a regional system of population clusters, civic-ceremonial centers, and sites of material production. These elements were all woven into patterns of managed, cultivated or domesticated landscapes, and systems of exchange. Each of these three early zones of urbanization is discussed as socially complex settlement patterns within larger, anthropogenic landscapes.

Challenge Questions for the Reader

- What do we know about when, how, and from where people first arrived in the Western Hemisphere? How did the environmental history of the Western Hemisphere affect human migration and inhabitation?
- What forms of anthropogenic landscapes did early Americans create? What relationships have been found between the first urbanisms and various methods of subsistence? How does agriculture fit into this larger picture?
- Why was social complexity a necessary precondition for construction of the earliest American monumental architecture and urban infrastructure?
- What are some of the differences among the earliest known complex urbanisms in Northern America, Mesoamerica, and South America? What are the various technologies used to build the earliest monumental architecture? Why do some archaeologists, anthropologists, and historians prefer to discuss monumental architecture within the context of local and regional settlement patterns and interaction spheres?
- What are some of the earliest known technologies of water management and irrigation in the Americas? How did water management technologies differ from ecoregion to ecoregion? What role did water infrastructure play in early American settlement patterns?

Ecological Settings and Settlement–Subsistence Patterns

By 8000 BCE people had occupied most ice-free places throughout the Western Hemisphere, from the Arctic Circle to Patagonia, from the Pacific Ocean to the Atlantic. While the populations were small and relatively mobile at first, over time these people dispersed into environmental niches that served as loosely anchored home bases for hunting, foraging, and fishing. The great diversity of geography and ecosystems of the Western Hemisphere established a dramatic range of settings for locally divergent patterns of life. While global warming after 15000 BCE proved deadly for some species, many parts of the earth became more hospitable. Many groups of people thrived and populations swelled. In the context of challenge and opportunity, people everywhere adopted new subsistence practices, not the least of which was the domestication of plants and animals. People in the Americas made substantial contributions to early experiments in agriculture, developing some of the contemporary world's most important domesticated crops such as corn and potatoes before 5000 BCE.[1]

In the wake of global climate changes, societies of highly mobile hunter-gatherers, epitomized by the Clovis culture, faced some hard choices. Most large mammals vanished from South America, and in Northern America some early species such as the woolly mammoth and the American mastodon also became extinct. Many of these animal populations were probably already stressed by human predation. Some hunters and gatherers moved on after the vanishing animals, towards the retreating edge of glaciers, into what are now Northern America's vast prairies and boreal forests. Some of these people discovered rich resources in the emerging woodlands, such as deer, birds, nuts, and berries. The American bison appeared in huge numbers and its hunters formed cultures anchored in extensive grassland territories. Intentional burning kept forests from

succeeding the prairies. People, plants and animals in these regions became one system in a fire-dependent ecosystem.

In the northeastern woodlands, burning the understory proved a useful practice, making hunting and traveling easier. While European colonists understood Indian burning as useful, William Cronon's seminal work of environmental history *Changes in the Land* explains how they misunderstood the more profound ecological impact of the practice:

> . . . most failed to see its subtler ecological effects. In the first place, it increased the rate at which forest nutrients were recycled into the soil, so that grasses, shrubs, and nonwoody plants tended to grow more luxuriantly following a fire than they had before . . . fire created conditions favorable to strawberries, black berries, raspberries, and other gatherable foods . . . The thinning of the forest canopy allowed more light to reach the forest floor . . . the soil became warmer and drier, discouraging tree species which preferred moister conditions . . . and favoring drier species like oaks when regular burning was allowed to lapse. Burning also tended to destroy plant diseases and pests, not to mention the fleas . . .
>
> Selective Indian burning thus promoted the mosaic quality of New England ecosystems, creating forests in many different states of ecological succession. In particular, regular fires promoted what ecologists call the "edge effect." By encouraging the growth of extensive regions which resembled the boundary areas between forests and grasslands, Indians created ideal habitats for a host of wildlife species . . . the enlarged edges areas actually raised the total herbivorous food supply, they not merely attracted game but helped create much larger populations of it.[2]

The Blackfoot people migrated to the Northern American Great Plains from the Great Lakes Eastern Woodlands sometime before European contact. The Blackfoot brought the more settled village traditions of the Woodlands culture to the Great Plains, where cultural traditions had remained consistent with the ancient nomadic hunting ways of life. The Blackfoot became hunters of bison also, using techniques learned from other pre-contact Plains groups. One technique involves adaptation of landscape features to trap and kill large numbers of bison. Many such features remain and constitute important archaeological sites. One of the most famous, Head-Smashed-in Buffalo Jump near Lethbridge, is a sacred site for the Blackfoot Confederacy, a Canadian historic landmark and a UNESCO World Heritage Site (Figure 1.2). Other indigenous groups used the jump long before the Blackfoot arrived—for sure by 4000 BCE—but perhaps as long ago as 8000 BCE when grasslands had begun to replace the boreal forest ecosystems and woolly mammoth extinctions set the stage for the ascendance of the modern American bison.

As in the prairies and forests of Northern America, early peoples in other parts of the Americas learned to manage landscapes, often through selective weeding of undesirable plants and sometimes by transplanting desirable plants to more productive locations, frequently closer to home. The ecosystems in some parts of the Americas became anthropogenic, more cultivated than wild. Scientists estimate, for example, that at least 11.8 percent of the Amazon forest is an artifact of human engineering over a long period of time.[3]

1.2
Head-Smashed-In Buffalo Jump, **Bernard Pelletier 2000. About this painting, Bernard Pelletier has said, "While what you see today at Head-Smashed-In is only the landscape, I wanted to respect the history of this park as much as possible. Since I chose not to paint any recreations in this series, instead of showing bison falling off the cliff I hid one in the clouds."[4]**

The complex relationships among groups of people, wild environments, and anthropogenic landscapes constitute one fundamental set of ideas that we can use to understand urbanism. The city's ecological footprint and its fundamental resource cycles (energy, food, water, garbage) characterize every settlement pattern, from the very earliest to the most contemporary. These systems have spatial, biological, and cultural consequences—some more sustainable over the long term than others. While the earliest settlement patterns—relationships among people, their dwellings, animals, gardens, orchards, and managed landscapes—formed within particular ecological contexts, environmental forces did not necessarily and exclusively determine these patterns. People transformed their physical and biological settings according to various criteria, some with no bearing on nutritional needs or practical advantage. These criteria were then, as now, indicators of community and individual priorities, values, and beliefs.

Agriculture and Urbanization

Agricultural practices first appeared, independently and at relatively similar times in history, in five regions of the world: the Fertile Crescent (an area of western Asia that stretches from the Nile delta to the basin of the Tigris and Euphrates rivers), Southeast Asia, Mesoamerica, South America, and the eastern United States. All over the world, those first important centers of agriculture were also early centers of permanent settlement patterns. Although it isn't always clear which came first, the settlement or the garden, the eventual inextricable relationship between sedentary lifeways and cultivation or domestication is well established. Agriculture appeared alongside cities in many parts of the world.[5]

In the beginning, once situated in a location best suited for cultivating certain plant species, people tended to stay put, intensifying their efforts, expanding their gardens, tinkering with their horticultural techniques, developing new tools to improve methods of both

cultivation and cooking. Cultivation of plants and animals, in many cases, led to domestication. Tending a wild plant or animal does not necessarily change its genetic material and evolutionary trajectory. Domestication modifies the DNA of the wild form. The first plant breeding experiments probably occurred in domestic garbage piles that happened to sprout. The wild bean or squash seedling carefully tended in the compost proved both convenient and more productive. These first gardens provoked hybridization among plant species that might not have been located near each other in the wild. The fecund household trash heap may have been the great instigator of one of humanity's most important technological revolutions. Once fully developed, the capacity to feed increasingly large numbers of densely settled people became one of the great achievements of humanity.

Jared Diamond, a science historian, argues that ancient farmers had a distinct advantage over hunter-gatherers.[6] Food surpluses could be stored and, with the advent of new, more time consuming and immobile techniques of cooking, more nutrition could be derived from raw plants. The closer association of people and their domesticated animals (sometimes under the same roof) developed more robust immune systems among the farming societies. A more sedentary lifestyle allowed for larger groups of people and a distribution of labor according to specialized skills. These larger groups of people developed more sophisticated social structures and language skills. Farming societies were able to grow larger and become more complex much more easily than the necessarily nimble and compact bands of hunter-gatherers. A community with an agricultural home base could also accommodate or absorb hunters and gatherers as distinct subcultures of a permanent settlement. The hunters could then go and become disassociated from the gatherers, who must have always slowed them down.

While it is common for urban historians to start their stories with the origins of agriculture, the relationship between farming—as conventionally understood—and urbanization is not quite so straightforward. In many places, especially in the Americas where wild food sources were abundant, people did not abandon fishing, hunting, and foraging in response to environmental changes. Some groups that chose not to settle down often favored managed ecosystems and anthropogenic landscapes. Some early communities were transhumant—they moved on a seasonal basis from one settlement to another. In most parts of the Americas, the overall pattern of the relationship between food systems and urbanization is really multiple patterns, some mutually exclusive, others overlapping with or forming parts of larger systems. Some cultures settled first, building monumental architecture or permanent residences—sometimes both—well before adopting agricultural practices. Many of these places that did not rely on community scale farming were centers of population density, trade, and ritual significance—all important dimensions of urbanism.

Most dense settlements in the early Americas eventually practiced various types of intensive and extensive agriculture, most likely provoked by population pressures. But most were also mixed subsistence economies of foragers, fishers, foresters, hunters, herders, gardeners, or farmers. Whatever the relationship between agriculture and urbanization, all early settlements depended on a variety of foods and many methods of procurement or production. While the first centers of agriculture relied on unique sets of species and techniques of cultivation, over time some technologies became fairly widespread and

universal. Others remained regionally unique for a very long time, giving specific character to cultures. In the end, however, many domesticated plants and animals in the Americas eventually spread throughout the hemisphere, carried over trade routes by people, or simply washed up, blew in, or showed up looking to be fed.

Just like today's food production systems, ancient agriculture can be discussed in terms of both scale (a household garden, a corporate system of fields) and practices (intensive, extensive, irrigated, intercropped, etc.). Practices implicate scale and vice versa: a kitchen garden can be watered and weeded by one or two people and the soil enriched with household wastes. An extensive crop of cotton for regional trade must be produced collectively; fertilizing and irrigating large fields takes a village, not a family. Agricultural surpluses—food or fibers—at household or community scale formed the basis of many regional exchanges. In the ancient Americas, as now, these systems connected people practically, economically, and culturally. But unlike contemporary life, everyone once participated in some aspect of agricultural production, not just its consumption.

Social Complexity and Urbanization

By 1000 BCE, the Americas boasted many cities, regional settlement systems, architectural monuments, and some of the world's first complex cultures. These first urbanisms were from the very beginning, by definition, complicated places anchored to local resources and subsistence practices but dependent on regional exchange. They were all centers of production and consumption—of necessities as well as luxuries. And they all served as instigators of urbanization in other parts of the Americas. It is commonly assumed that agriculture was a necessary precondition for urbanism. While it is true that urbanized cultures around the world eventually developed an inextricable relationship with some form of agricultural production, in some cases the city seems to have come first. In others, monumental architecture predates both agriculture and permanent settlement.

Many theories of urbanism also include mutual defense as one of the best reasons for people to first aggregate into dense settlement patterns. The archaeological record does include much evidence to support this theory—defensive walls feature prominently in many very early cities around the world—but marking the landscape with meaningful, permanent form also established places for gathering in times of peace as well as war. More significantly, perhaps, is the fact that in both cases the construction process itself created mechanisms for social interaction. The labor required for defensive walls, public monuments, or community scale agriculture (especially in dry regions requiring irrigation systems), demanded coordination and cooperation over long periods of time. Community-building itself may have even constituted the primary purpose for some of the world's more enigmatic ancient monuments.Whatever the origins of urbanism—and they are certainly diverse—complex social organization—of the sort necessary to build on an extensive or monumental scale—is a fundamental basis of urbanity.[7]

This chapter focuses on those three parts of the Americas where urban forms first appeared, apparently without precedent. These are places where urban life was invented, both out of necessity and by design. These three regions also present three very different histories of the co-evolution of urbanism and agriculture. These areas were not absolute

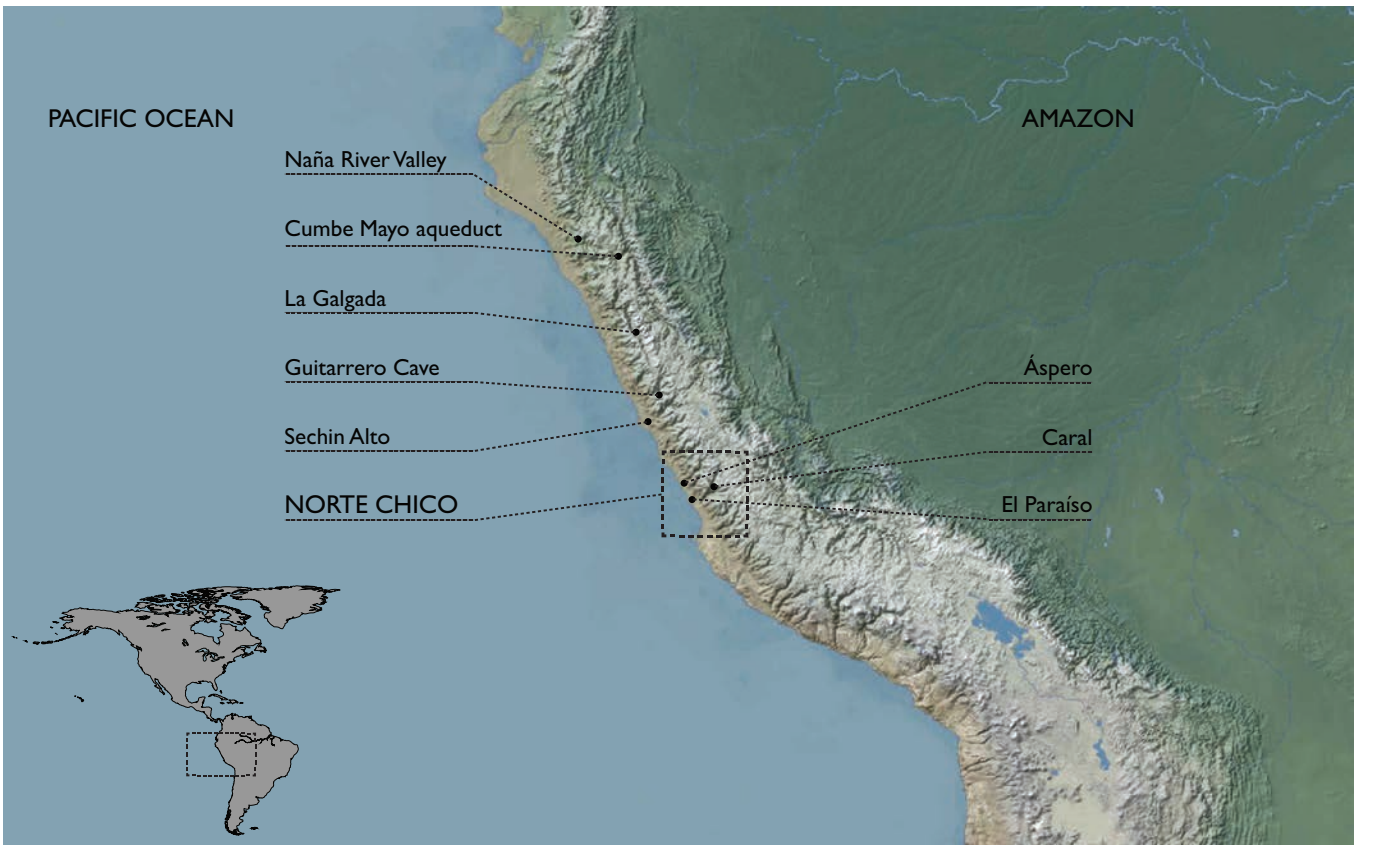
points in space from which the first cities grew. Like their counterparts in the Middle East and Asia, these regions were, and in some sense still are, mosaics of smaller settlements that contributed variously to a widespread and evolving technological, social, economic, and political complexity. They were what some anthropologists, archaeologists, and historians call interaction spheres.[8]

The spatial organization of these places also developed over time according to local conditions, developing unique characteristics—some of which have endured, some of which were replaced by subsequent inhabitants. Some spatial patterns were nucleated, some distributed; all were embedded in historical, environmental, ecological, and ideological circumstance. They were complex contingencies, like all places everywhere throughout time. These places have histories that are mostly unknown. It is tempting to construct spatial and temporal patterns with scant historical evidence, drawing out narratives that serve as hypotheses at best, misleading fictions at worse. This chapter tries to respect the lack of evidence available to archaeologists, anthropologists, and historians by sticking closely to the material evidence, offering the reader just enough of the academic debates to provoke curiosity and further reading. We cannot yet be sure, for example, that the multiple mounds built at Poverty Point in what is now southwestern Louisiana, were constructed by descendants of the same culture group that built those at Watson Brake, 2,000 years earlier—but just 100 miles away. History happens in both time and space.

Norte Chico

There is much debate and many competing theories about when, where, and why the first complex settlements emerged in the Americas, but recent studies now point to the Central Andean region along the coast of what is now Peru[9] (Figure 1.3). And, while the origination dates are not known, there is no doubt that by 3500 BCE an interdependent network of coastal, river valley, and highland population centers existed, especially within a particularly vital area often referred to as the Norte Chico.[10] This regional system had some contact with other early sites of precocious sedentary life as far north as Ecuador and as far south as Chile, in both coastal and inland areas. People in the area may have also had involvement with people on the eastern slopes of the Andes, borrowing wild and cultivated plants from emerging agriculturalists in the Amazon basin. Archaeological finds at Norte Chico sites include artifacts and ecofacts with exotic origins. The Norte Chico may not contain the oldest permanent settlement sites in the Americas but it is most likely the hemisphere's first durable, complex urbanism. Lasting for over a millennium, it set the stage for many later Andean cultures such as the Chavín, the Moche, the Wari, and the Tiwanaku—and, as many would argue, the great multicultural empire of the Inca. According to experts in this particular period of Andean archaeology, Jonathan Haas and Winifred Creamer, the Norte Chico developments were one of the most important cultural watersheds in American history:

> The complex of sites in the Norte Chico region is nothing short of extraordinary on the Late Archaic[11] Andean landscape. While a very small number of contemporary sites with communal architecture, such as Kotosh or La Galgada, are present in other parts of the Andes, the concentration of at least 25 large ceremonial/residential



1.3
Andean Region

sites in the valleys of the Norte Chico is unique. Metaphorically, most of the Andes is covered with granules of sand during the Late Archaic. In a few spots, there are anthills that clearly stand out from the loose granules. Then in the Norte Chico, there is a volcano.[12]

One of the oldest specialized settlement types in the Norte Chico system relied on fishing as a primary way of life and probably set the regional trajectory in motion. Seasonal foragers from the highlands and coastal plains may have gradually abandoned previous transhumant subsistence patterns in the wake of climate changes. They may have settled down along the coast, where they had discovered a burgeoning ocean. The regional pattern also included settlements along one or more of the area's rivers that carry snowmelt from the mountains to the sea. In the otherwise arid valleys up and down the Pacific coast of northern South America (not just in the Norte Chico) riverside farmers invented techniques of irrigation that prefigure the more sophisticated agricultural practices of later Andean cultures.

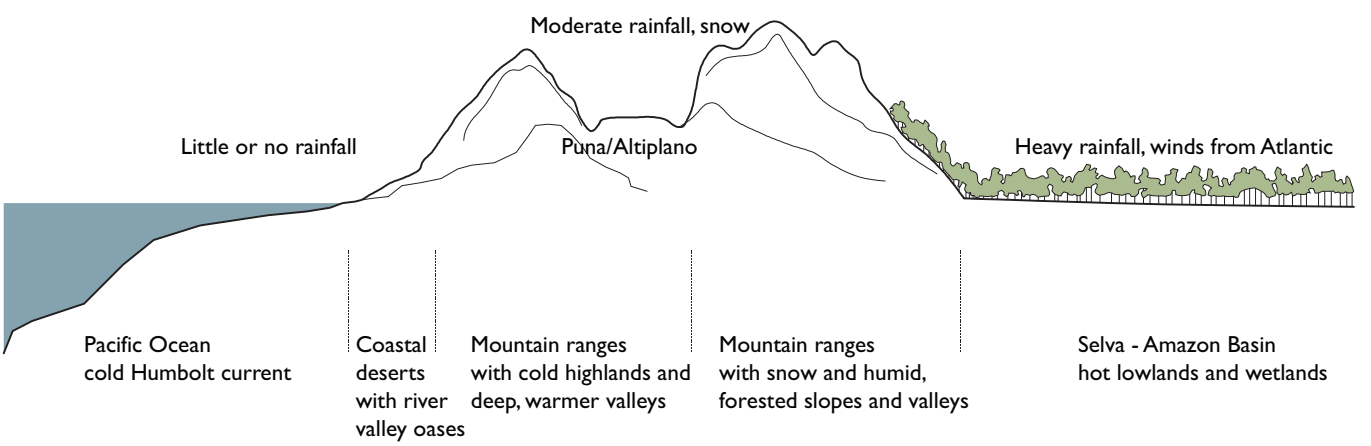
As with these beginnings of urbanization, the origins of agriculture in South America most certainly predate its implementation in the Norte Chico river valleys. Traces of ancient cultivated and domesticated plants have been found at sites in the highlands that are older

than Norte Chico. Earlier diffusion of wild, cultivated, and domesticated species from the eastern tropics into the highlands and to the Pacific coastal areas is certain. 10,000-year-old domesticated beans, oca, and peppers found in Guitarrero Cave, about 100 miles south of the Naña River valley at an altitude of about 8,500 feet, may prove to be some of the oldest domesticated foods in the world. The cave most likely was a campsite for mountain and altiplano foragers, not a permanent settlement. Good evidence for early domestication of plants (and animals) has been located throughout the western Andes at elevations from sea level to well over 6,000 feet. At even higher altitudes, seasonal and temporary settlements with exploitation of indigenous plant species and animals occurred quite early. High altitude crops such as quinoa and potatoes were domesticated by 5000 BCE and camelids (alpacas and llamas) by 4000 BCE in multiple parts of the Andean highlands.

Late Pleistocene climate changes in the Andean mountain valleys presented new subsistence challenges to foragers and offered several likely environments for the emergence of agriculture in its most basic sense. As the practices—and the seeds—spread throughout the region, agriculture and settlement patterns quickly became co-evolutionary. Local adaptations produced a diversity of agricultural practices, including hybrid forms of subsistence that integrated farming with foraging, herding, and/or fishing. The rich range of ecosystems in the Andean region played a significant role in the development, over many centuries, of one of the world's most important centers of agricultural innovation, as well as some of the most important crops now grown worldwide. (Figure 1.4)

The Norte Chico system of settlements is not only one of the oldest complex urbanisms in the Americas, it is one of the oldest in the world. From a global perspective, the region's hybrid maritime–agricultural cultural basis is also historically unique.[13] Although the Norte Chico shares agricultural foundations with other early world civilizations, the persistence of a crucial dependency on maritime resources may have contributed to those particular cultural characteristics that are now indentified exclusively with the Andean region. For example, cotton, a primary crop in the Norte Chico, was an industrial product, not food. Cotton grew wild in several parts of the Americas when people first arrived and its domestication history has not been definitively documented. By at least 3500 BCE, however, cotton

1.4
North-central Andean ecosystems diagram



production in the Norte Chico region launched an exchange-based economy that linked people in the valleys and highlands with their coastal neighbors.

Sardines and anchovies, harvested from the rich Humbolt Current zone of the Pacific Ocean with cotton nets and bottle gourd floats cultivated in fields many miles from the coast, provided the nutritional staple for the inhabitants of those inland and highland towns. Did fishing and farming people from the coastal villages initiate this exchange by sending members of their communities inland to farm at more productive locations? Did early farmers from the highlands discover the fishing resources and set up the first coastal camps? Did early foraging people practicing a transhumant lifestyle, utilizing both maritime and highland resources, eventually settle down into complementary, specialized communities in the Central Andean region? Whatever set the Norte Chico settlement pattern in motion, the evolution of a capacity to manage such an extreme range of resources and production methods in a geographically dispersed mosaic of specialized settlements was unprecedented. While the details are not well understood, some form of socio-political organization emerged in the region that allowed for continuous population expansion, infrastructure development, and monumental architectural construction from before 3500 BCE to around 1500 BCE. In his important book *1491*, Charles Mann points out the historical significance of the Norte Chico's social complexity:

> It's one of only two places on earth—three if you count Mesoamerica—where government was an invention. Everywhere else it was inherited or borrowed. People were born into societies with governments or saw their neighbors' governments and copied the idea. Here, people came up with it themselves.[14]

The diverse and dispersed Norte Chico system seems to have resulted in a more dispersed socio-political pattern. Although there isn't enough evidence to fully explain the mechanisms of production and consumption among the various polities of the Norte Chico, the complete lack of defensive structures and evidence of warfare in the archaeological record suggests a uniquely peaceful cultural landscape. The Norte Chico, so it seems, was a highly successful and open system of urbanization that expanded rapidly around 3500 BCE without the provocation of competition for resources or political conflict. While centers of power make their first appearance in the Norte Chico and later became salient features of Andean urbanism, the region's bias towards geographically networked exchange remained key in the overall pattern of urban development in the Andes.

Most people left the Norte Chico after 1500 BCE, perhaps for other areas with more capacity for intensive agriculture, perhaps because of heavy storms and temporary declines in marine resources produced by El Niño effects. Structural damage to major monuments following a major earthquake points to other provocations. Some places remained inhabited after the disintegration of the larger system, however, and a few deserted ruins later became destinations for religious pilgrims. Some Andean scholars believe that the region's government was a theocracy. The origins of a pan-Andean religion can be traced to artifacts discovered at Norte Chico sites. The urban forms and public architecture of the population centers (products of intentional design and political organization) indicate cosmological

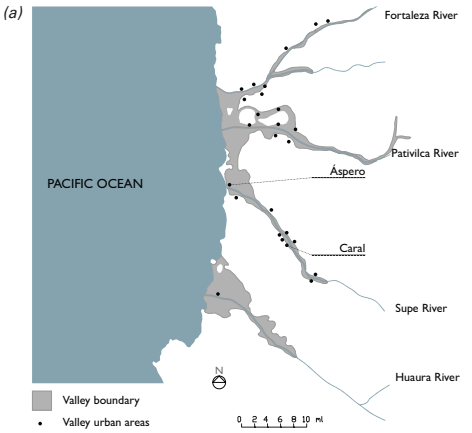
common ground with later cultures. After its decline, the Norte Chico cultural influence persisted in the general Andean region. Features of later cultures that probably originated in the Norte Chico include a sophisticated textile industry, complex agricultural engineering, long distance trade networks, and musical traditions.

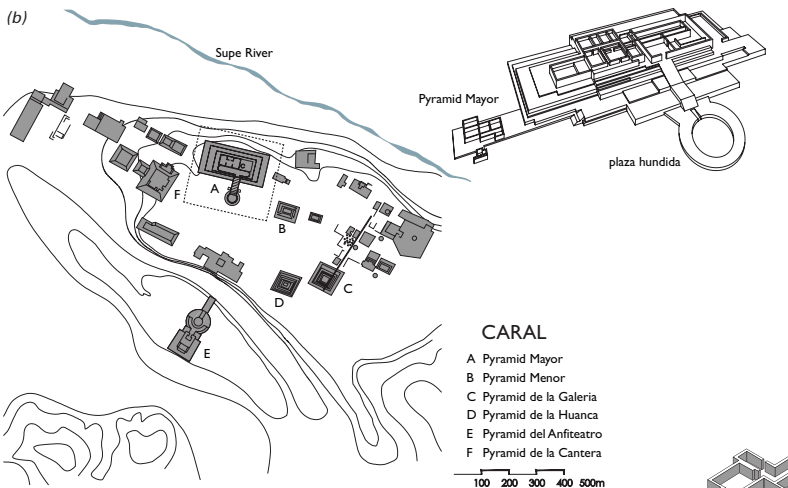
The architectural legacy of the public monuments across the Norte Chico region is better documented than that of its domestic constructions.[15] Many highly visible platform mounds at several sites have been surveyed and tentatively dated (Figure 1.5a–e). One of the oldest recorded is in Aspero, a coastal fishing city. The other population centers with monumental public architecture known to archaeologists working within the Norte Chico all have at least one platform mound with remains of ceremonial enclosures on top. The enclosures on the mound summits accommodated only a few people, far less than the number of people necessary to build the mounds. The oldest, the Huaca de los Idolos at Aspero (Figure 1.5c) consisted of several rooms with wall niches and painted raised clay friezes. A separate passageway led to a room with a single niche and an altar or bench. This shrine-like space included an alcove with a collection of carefully buried objects. Among the baskets, textiles, plant remains, and animal fur were over a dozen clay figurines that appear to be the work of one person. These spaces served as exclusive precincts for members of the community who had special privileges and powers to access the metaphysical realm.

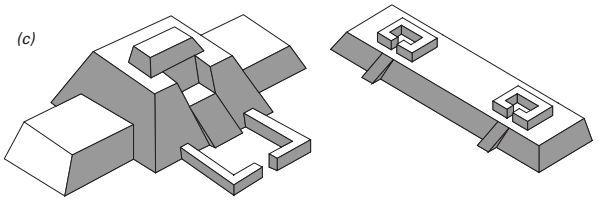
The platform mound is present in all known centers throughout the Norte Chico and beyond—the tradition apparently inspired similar public architecture outside the region. The largest mound in the greater region is Sechin Alto, built between 1800 and 800 BCE in the Casma River Valley, south of the Naña River but north of the Supe (Figure 1.5e). At one of the most famous and carefully studied sites, Caral in the Supe River Valley, there are six mounds, each of which is slightly different. The variations suggest multiple deities or kinship groups, or both.

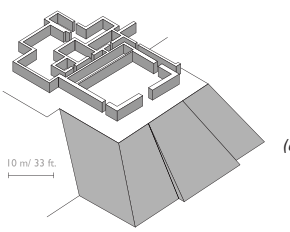
Circular sunken courts, often called plazas hundidas, like those at the base of the Pyramid Mayor in Caral, are another common element of urban form in the Norte Chico. More than 40 have been identified within the four river valleys but they also occur outside the region. Caral's is the earliest known, constructed in about 2450 BCE. The plaza hundida and the platform mound, as a spatial sequence, defines a link between earth and sky. In the Norte Chico, we see the first architectural manifestations of key ideas in Andean theology. In these spaces the community and its religious leaders performed rituals that demonstrated cosmological beliefs and the social order. Circular plaza hundidas appear consistently in later centers throughout the wider central Andean region until about 700 BCE when, at Chavín de Huantar (in the highlands less than 100 miles north of Caral), a new square plaza was built alongside the earlier circular one, indicating a significant change in ritual practice. The square sunken court remained the dominant form into the Inca period.

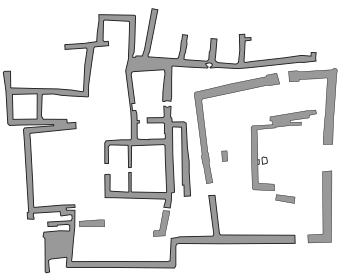
There is enough variation in the arrangement of mounds from one center to another to serve as evidence that these localities were semi-autonomous communities. However, one pattern was repeated throughout the greater region. This fundamental diagram is a U-shaped assemblage of a primary platform mound, often stepped, with smaller mounds arranged around an open plaza at the base of the primary mound. The formation appears first at El Paraíso in about 2000 BCE and in many other much later Andean contexts. While

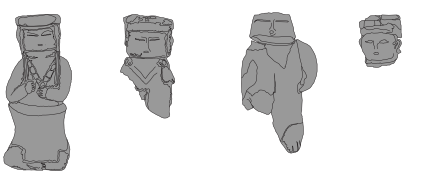


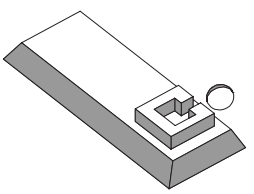












1.5a–e
Norte Chico urban forms

1.5a

Regional map

1.5b

Caral

1.5c

A typical ceremonial core

At most ceremonial cores a larger platform mound with multiple smaller mounds and plaza hundidas defined a large open space in a U-shaped arrangement.

1.5d

Huaca de Los Idolos, Áspero

Rooms, galleries, and passageways of the platform mound summit served small numbers of people, not large groups. Fragments of figurines were discovered in the spaces on the summit, which were repeatedly remodeled, suggesting changes in ritual practices and beliefs or social organization, perhaps both.

1.5e

Sechin Alto

The largest monumental construction of this early period defined a series of linked ceremonial spaces that stretched out over 1,000 meters or 3,000 feet.

1.6
Shicra remains found at Caral

the repetition of U-shaped temple formations probably demonstrates some widely shared beliefs and practices among otherwise independent communities, it may also be evidence of a conscious attempt to establish a more comprehensive theocratic order among these localities. In either case, perhaps both at once, the power of formal composition as a symbol of order is clearly at work in these first Andean urban complexes.

The mounds were built over time, getting larger with each construction phase. Builders often used bags of stone, called "shicra," which were filled and hauled to the site from nearby quarries (Figure 1.6). Existing ritual enclosures were filled in and rebuilt on increasingly higher platforms. Archaeologists have found evidence of ritual feasting at each layer of construction in most platform mounds in the region. Food remains, charcoal, and other residues of celebratory gatherings are built in to the mounds. The fundamental pattern of permanent and temporary residence in the region still needs investigation but, for now, it seems as if larger groups of people assembled in these cities than is suggested by the permanent domestic architecture. At Caral, for example, only 5 percent of structures excavated to date are residential. There is a range of housing types, from the quarters of an apparent elite group to the humble shelters of workers—perhaps those who hauled stone and dirt to construct the enormous mounds. But there doesn't seem to be nearly enough permanent housing for the numbers of people needed for the quantity of farming and construction that took place in the area. Perhaps some people lived in very small settlements in nearby quebradas, few of which have been examined by archaeologists. Or perhaps people traveled to the city from smaller villages in the region, lived in temporary houses, and worked on a seasonal basis. The celebratory evidence found in these public monuments suggests great gatherings of willing souls from a wide-ranging network of affluent communities.

Box 1.1 Irrigation

Recent excavations in the greater Naña River valley, about 250 miles north and inland from the area now defined as the Norte Chico, have documented some of the earliest known irrigation canals used for intensive agriculture in the world. Work by Tom Dillehay and his colleagues at this highland site also confirms the establishment, between 7000 and 5500 BCE, of "permanent or semi-sedentary to sedentary life with larger organized communities, careful burial of the dead, separate small-scale open public spaces and domestic circular houses, and subtle social differences."[16]

Unlike water management techniques developed by the first farmers in Mesoamerica (where both rain and groundwater were abundant), the earliest systems in the Andean coastal region depended on mountain runoff in the otherwise arid river valleys. Community-scale agriculture in the region required irrigation. Maintaining river-based irrigation canals, diversion dams, and spreaders in the relatively steep, narrow valleys and wider alluvial fans near the coasts involved much labor and social cooperation.

Salt and silt accumulation probably reduced the productivity of these first farm fields over time, causing people to move away to other parts of the general Andean region—such as the highland areas later occupied by the Wari and the Tiwanaku—cultures that perfected systems of agricultural water management based on engineered raised fields and terracing. People have continued to practice irrigated agriculture along the Pacific coastal regions of the Andes, however, and some of the earliest canal systems are still functioning.

Later irrigation canals in the region include the famous Cumbe Mayo aqueduct (Figure 1.7a–b) near the contemporary Peruvian city of Cajamarca. Constructed around 1500 BCE, it is about five miles long at an elevation of 11,000 feet. The aqueduct cuts its way through stone, redirecting water from the eastern slopes of the mountains towards the west. While the construction is now a tourist attraction and not part of any local water management system, it stills functions as originally intended.

1.7a–b
Cumbe Mayo aqueduct

Mesoamerica

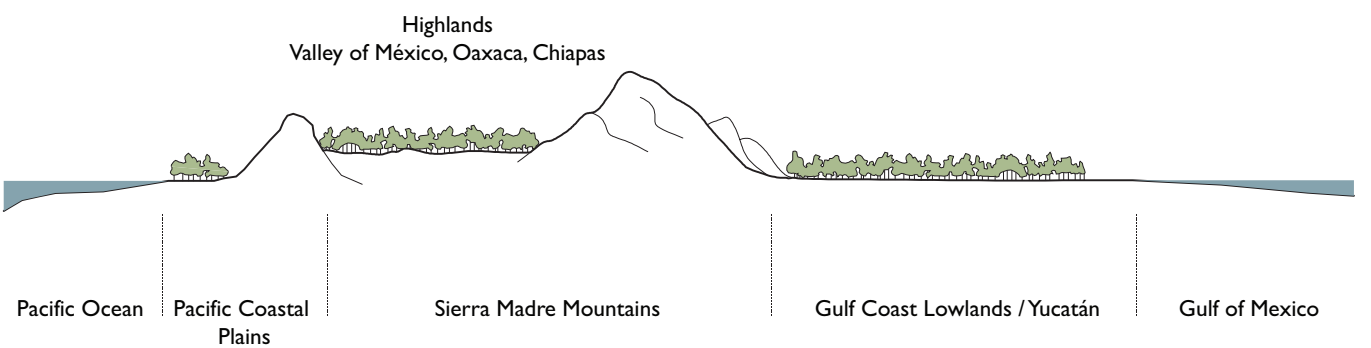
The Western Hemisphere's narrow midsection, Mesoamerica, is—like the Central Andes—an area of exceptional ecological variety[17] (Figure 1.8). High mountain valleys, tropical forests, seasonally flooded lowlands, marine estuaries, and sandy beaches all set the stage for biological and climate diversity. Some of the earliest evidence for cultivation and domestication of wild plants and animals in the world has been found in the region. Like in the Central Andes, there are ancient traces of sedentary communities and early cultivation in many eco-zones throughout Mesoamerica. Early agriculture in Mesoamerica demanded less community effort than in the arid Norte Chico. Although there are some dry areas that were later farmed using intensive irrigation, in many areas—for most of the early period of human settlement—the necessary rain fell. In most other parts the region dry seasons could be as productive as wet with a bit of additional watering with simple river-based canals or pot irrigation.

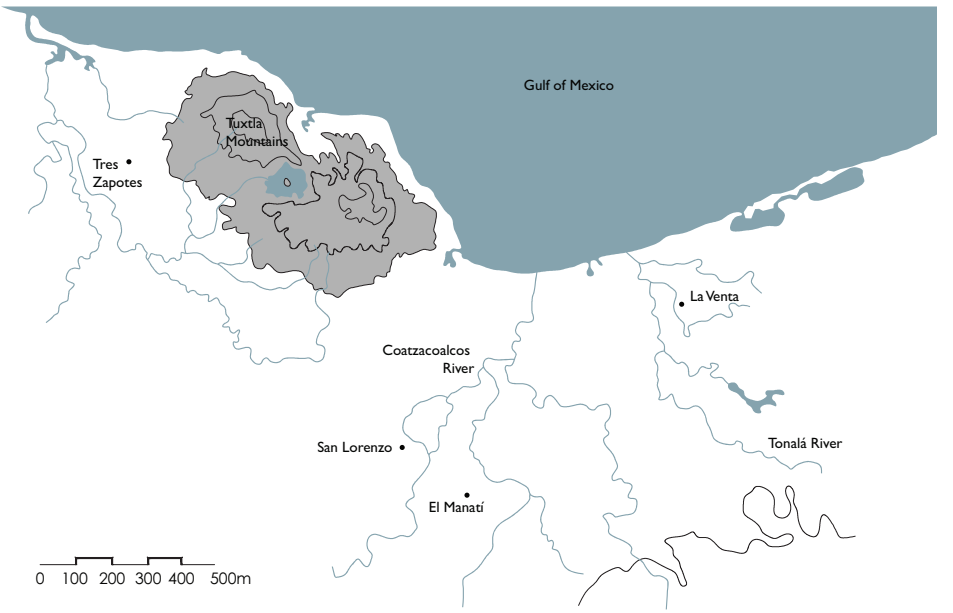
In addition to plant domestication and genetic modification, indigenous Mesoamericans manipulated forests. Selective tending enhanced growth of desirable trees and other plants for food, medicines, fuel, fiber, and construction materials. Forestry transformed wild areas into anthropogenic landscapes that European colonists later misunderstood as "savage" or "pristine." Long before European contact, many of Mesoamerica's wild and cultivated forests were already gone, burned clean for crops that needed more sunlight. By the time Europeans first encountered Mesoamerica, people across the region were living in a variety of settings that environmental historian William Cronon would call "second natures." Cronon warns us, however, that it has always been difficult to tease apart the pristine and the anthropogenic:

> I have tried to reduce confusion (but may have only heightened it) by resorting to the Hegelian and Marxist terms "first nature" (original, prehuman nature) and "second nature" (the artificial nature that people erect atop first nature). This distinction has its uses, but it too slips into ambiguity when we recognize that the nature we inhabit is never just first or second nature, but rather a complex mingling of the two.[18]

After 3000 BCE a distinctive regional settlement pattern of scattered and clustered house lots emerged in the tropical lowlands along the Gulf Coast, in an area that is usually

1.8
Mesoamerican ecosystems diagram





1.9
The Olmec Heartland, "Olman," regional map

called the Olmec Heartland[19] (Figure 1.9). Many settlers positioned themselves along the waterways, building low mounds to raise the house lots and kitchen gardens above the flood plains. Some household clusters contained bigger mounds for activities that outgrew extended family domains. These villages occasionally included small levees and dikes to control the tendency of the rivers to change course. All over the lowlands, within the very dynamic condition of a seasonally flooded environment, some places became bigger than others but all remained relatively autonomous within a more or less contiguous sprawl. This early Mesoamerican "garden city" is often dismissed as "non-urban" by archaeologists and anthropologists working from models of city form that privilege clearly defined margins (defensive walls or abrupt drop offs in density) and well-defined cores with monumental architecture.

Joyce Marcus, a prominent Mesoamerican scholar, warns that these preconceptions prevent fieldwork that addresses the bigger picture of regional settlement patterns. She thinks that archaeological work that only looks into dense, well-defined settlements with monumental architecture will only find those places:

> Our problem is simple: we are trying to define the city so as to satisfy Western social scientists, not Mesoamerican Indians. For the Mesoamerican Indian, the important unit was the political territory controlled by a native ruler. It contained "populated place" simply referred to as "big" or "little," or as "small places subject to big places." The city dweller did not verbally distinguish himself from the rural dweller as did the Roman urbanite from whom our notion of "city" comes. The capital was where the ruler's palace was, the religious hierarchy began at the largest temples, and the markets could be several or none.[20]

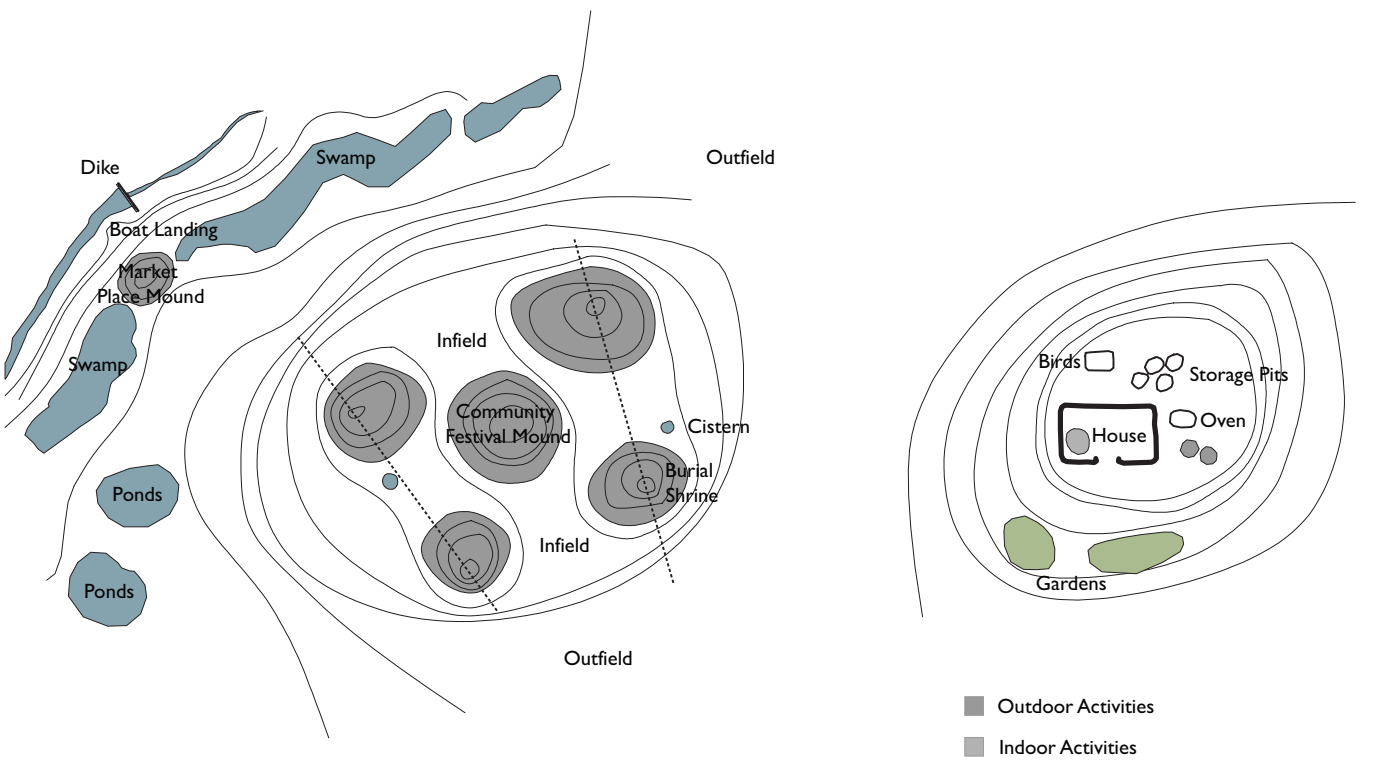
Box 1.2 Mesoamerican House Mounds

People living in the tropical lowlands of early Mesoamerica modified the swampy landscape to better support dwellings, gardens, and areas of craft production. These sites usually involved mounds for elevating occupied spaces above permanent and seasonal wetlands. The territories of individual family groups often included multiple mounds and low-lying zones of agricultural production. Ridges, dikes, and other earthworks sometimes linked these isolated high points within a family group. Communities of extended families also formed larger clusters, with some mounds constructed and maintained for public activities. This organic development of linked house mounds, community mounds, and other public landscape features like dikes and boat landings, constituted the first settlement pattern in low lying parts of Mesoamerica.[21]

Each domestic realm usually included enclosed spaces for sleeping and gathering, configured to define at least one main outdoor space (the patio). On the mound, along with the house and patio, the residents planted small kitchen gardens, sometimes with shrubs and trees that produced food and medicine. They also grew plants used for fibers and other purposes, including ornamentation. People in Mesoamerica domesticated turkeys and dogs, which were kept near the house. During drier periods, kitchen gardens on the mound were watered from storage ponds or cisterns replenished during periodic flooding.

Multiple mounds often defined a kinship residential cluster, with small-scale levees constructed to protect low-lying fields and other areas defined within the larger cluster. Most families and extended kinship groups maintained two types of fields, infields—located nearby—and outfields—often much bigger for quantity production within local systems of economic exchange. Variations on this generic set of elements—house, patio, garden, cistern, pond, mound, levee, infield, outfield—still constitute a familiar residential pattern in many parts of contemporary Mesoamerica where traditional agrarian lifestyles survive.

People often buried the dead within the house mound zone, in deep pits or within large ceramic vessels that were also buried in the house mound. Occasionally, the house itself was abandoned after its residents were dead and buried, becoming a shrine. In Mesoamerica the earliest versions of the construction methods applied to monumental step pyramids can be traced to house mounds turned into shrines and maintained by the living as commemorative architectures.



1.10
Mesoamerican house mound diagrams, cluster and plan

The low density agrarian urbanism that emerged in the coastal tropical lowlands across the Isthmus of Tehuantepec later finds a very sophisticated expression in Mayan city-states that appeared to the south of Olman (another name for the Olmec Heartland). And the whole of Mesoamerica eventually supported a variety of polities in many ecological settings. With a few very important exceptions like Teotihuacan and the Aztec capital of Tenochtitlán (explored in Chapters 3 and 4, respectively) the pattern of urbanization prior to European contact, in general, can be characterized as a robust world of politically decentralized, but economically and ideologically related, agrarian communities—big places and little places—all intimately incorporated with local environmental resources. Instead of looking for the first "city" in Mesoamerica where "civilization" emerged, we should look everywhere at once—as many archaeologists are now doing—and picture the complex environmental transformation of Mesoamerica as a process that started in many places at the same time, becoming inhabited more or less densely everywhere. In the context of this resource-rich, environmentally diverse region many early communities thrived, eventually creating some of the finest art, most spectacular architecture and most sophisticated scientific and technological discoveries in the world.

The Olmec, like the people of the Norte Chico, may not be so much a distinct civilization—although they are usually discussed as such by archaeologists, anthropologists, and historians—but more likely a set of closely related societies in a regional interaction sphere. While early settlement formation and agriculture occurred in areas well outside the Olmec Heartland, the people in this region appear to have been especially influential, establishing some patterns of everyday life and cosmological ideas that thread through Mesoamerican culture to the present day. They were precocious artists and scientists and, perhaps, the first Mesoamericans to use a system of writing.

One of the most interesting points that can be made about the emergence of complex settlements in Olman, is that it defies one theory of the origins of urbanization, of civilization itself. This "hydraulic theory"[22] proposes that the necessity for large scale agriculture to feed growing populations required irrigation technologies—technologies that demanded not only large amounts of labor but also cooperation, coordination, and administration of that labor by a few important members of the society. Some anthropologists and cultural historians believe that the hierarchical relationships that evolved to manage irrigated agriculture were necessary preconditions for complex social formations. While the maritime–agricultural interdependency in the Norte Chico is an unusual early urban pattern, irrigation technologies certainly influenced the region's early social organization. In most of Mesoamerica agriculture was easy and labor-intensive irrigation strategies were unnecessary. Every household cluster could feed itself using a combination of private gardens, foraging, and a bit of neighborhood exchange. Even where water management techniques were used, the scale of construction required usually fit within the labor available in a very small community or extended family. Something other than corporate, irrigated agriculture provoked the cultural complexities and numerous indicators of social sophistication (religion, art, mathematics, and writing) that appeared in the lowlands after 3000 BCE.

The people of Olman, like those of the Norte Chico, relied on a diverse array of natural resources, including marine and fresh water plants and animals. They became accomplished

agriculturalists who produced cotton, maize, beans, and squash. They developed the capacity to create surpluses for trade with highland communities that had access to basalt for buildings, metates, and art. The people of the lowlands also cultivated cacao and collected shells and feathers, which they traded for greenstones and obsidian—luxury goods not locally available. The lowlands developed a substantial textile industry based on cotton, which was traded widely. The world's first rubber balls were invented in Olman and also became important exchange commodities. While Mesoamerica lacked an indigenous animal suitable for domestication that could be used as a beast of burden, the people managed to move themselves around, hauling along some raw materials and manufactured products. Waterways served as the best transportation routes for heavy loads, such as the enormous blocks of basalt used for architecture and sculpture installed at sites far removed from the quarries.

Many platform mounds of various sizes formed the more decentralized urbanism of early Mesoamerica; archaeologists continue to discover these community centers, big and small, throughout the Olmec Heartland and beyond. This signature architectural form of early Mesoamerica appears to have been a common neighborhood amenity not just in the early formative times but also well into periods of very large-scale monument building. The form retained its function as a village center even after bigger urban places were built. Mesoamerican archaeologist Rosemary Joyce believes the platform mound in Mesoamerica did not originate as a symbolic form, a function it certainly acquired a some point, but that the high, dry level space simply extended the outdoor multifunctional spaces of the house mound clusters in both space and time: in a landscape prone to severe erosion, the bigger platform lasted longer.[23] As an element of relative permanence, the platform mound acquired its metaphysical associations and became symbolic of the dynamic interplay between human beings and their environmental context, between building and rebuilding, between impermanence and permanence. In the context of everyday life within the larger mosaic of diverse social practices, certain cosmological ideas became widely shared and the village platform mound evolved into a temple platform. The platform mound came to represent mountains, caves, springs, and animals through its architectural features—becoming an axis mundi in space and time.

Most histories of early Mesoamerica point out two or three bigger urban places as "centers" of the Olmec social, economic, and political world, as if they dominated the whole region. San Lorenzo, La Venta, and Tres Zapotes are the most carefully studied and consequently have been considered the most important. In reality these centers may not have been sites of exclusive political or economic control. They were certainly not the only sites of specialized production and economic exchange. In general, early Mesoamericans lived where they worked and the pattern persisted well into contemporary times—most agriculture and many types of craft production occurred in the decentralized household clusters. Nevertheless, the great mound at San Lorenzo, the first very large center within the Olmec Heartland, represents an enormous investment of labor that transcends other village-scale efforts. Construction involved artificial enlargement of a naturally elevated site.

True to the regional pattern, San Lorenzo is really a collection of sites interrelated through both time and space, practically as well as ideologically. Originally located between two branches of the Coatzacoalcos River (which have since changed course), the area contained

numerous causeways and dikes that managed river traffic and trade. The summit, with its great basalt stone portraits (Figure 1.11) and thrones was clearly the domain of an elite group of people whose efforts at self-aggrandizement were very successful. Craft workshops and residential areas surrounded the great mound, many occupying the rammed earth and bentonite terracing that rose up from the swampy river basin. The people of Olman were

1.11
Basalt stone portrait from San Lorenzo. Photographed in 1945 by Richard Stewart for the National Geographic Society.

some of the first in Mesoamerica to make artifacts of complex iconographic significance. Their considerable material production seems to have had the effect of broad ideological diffusion. People in the affluent sprawl within the Olmec Heartland and beyond apparently chose to identify with this energetic and imaginative cultural force. To think and live like the people associated with San Lorenzo probably set individual communities apart, perhaps giving them priority access to prestigious trade goods and the services of an emerging set of religious experts.

While the details of local religious beliefs and practices varied across early Mesoamerica, the overall region came to share some notions about life and death, space and time, the sacred and the profane. Representations of mythological beings and deities have similarities across many separate cultural groups in the larger region. Although they were not alone in Mesoamerica, the people of Olman probably made many contributions to what later came to define the broad cultural characteristics of Mesoamerican civilization. Religion may have served as a political tool to organize and unify an otherwise decentralized social landscape; the leadership at San Lorenzo may have used iconography as propaganda in this effort. This place was certainly a ritual center: the earliest evidence for Olmec ritual practices has been found in a natural spring bog, El Manati, about 10 miles from San Lorenzo. Wooden busts, rubber balls, ceremonial axes, bones of infants, pottery, beads, and traces of prepared cacao dating from 1700 BCE and 1200 BCE were found at this apparently sacred place.

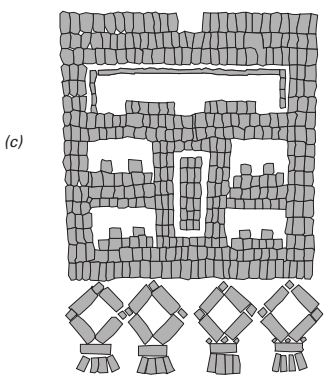
1.12a–d
La Venta

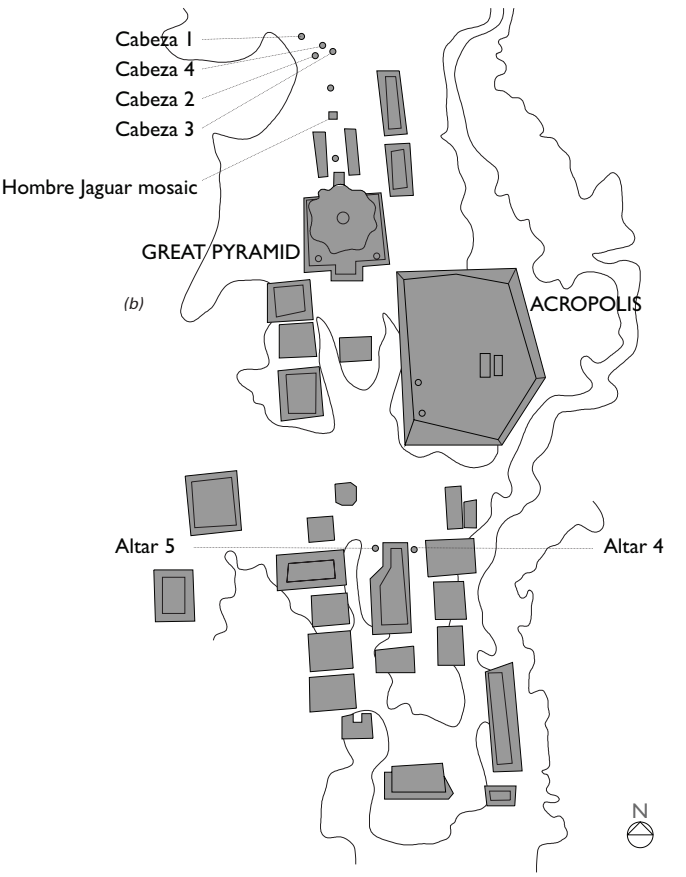
1.12a
Cabezas 1–4

1.12b
La Venta's urban core included a prominent central pyramid about which all other constructions are organized, primarily on a north–south axis that is skewed 8 degrees west. The area north of the Great Pyramid was reserved for the elite but the plaza just to the south facing the Stirling Acropolis, served as area for public spectacles.

1.12c
Hombre Jaguar
One of three ritually buried mosaic pavements.

1.12d
Altar 4
The individual portrayed here on the altar front emerges from a jaguar's mouth and is holding a rope that stretches around the altar to bind the hands of another figure on one side, which may have symbolized captivity or ancestral relations.





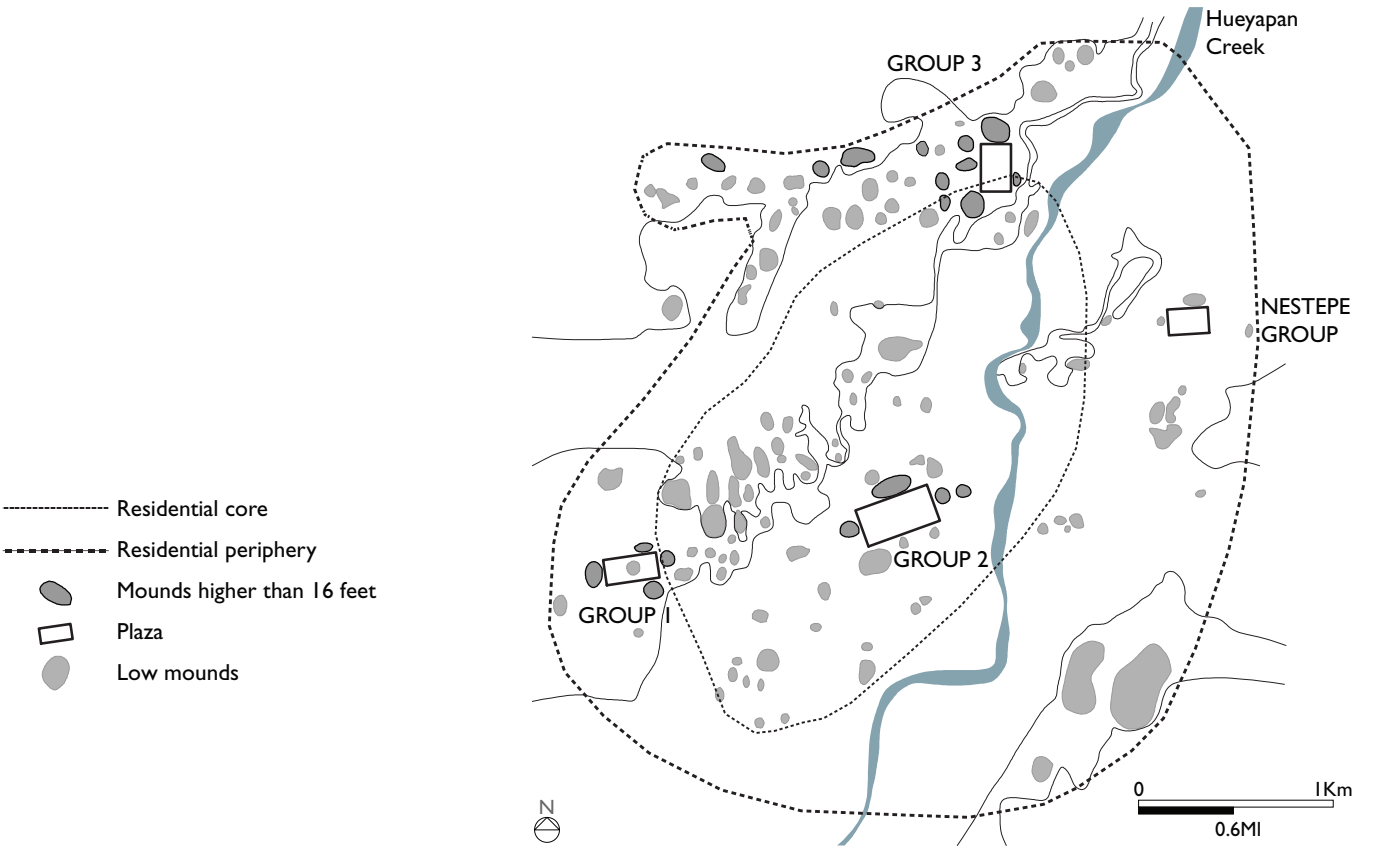
Given the symbolic power of the urban landscape and the sculptures at San Lorenzo, the intentional destruction of the large stone portraits, altar/thrones and stelae, and the abandonment of the great mound after 900 BCE must represent important changes in Olmec society. While it isn't clear what caused the move, two other regional centers developed rapidly after San Lorenzo was abandoned. Of these, La Venta—occupied from 1200 BCE to 400 BCE—seems to have replaced San Lorenzo as the most important political center in Oman, if indeed there was one. Built on an island in a coastal swamp near the Tonalá River, the formal arrangement of La Venta's monumental core suggests a political hierarchy, perhaps even a centralized authority. La Venta's mounds were built of earth and clay. The great pyramid at La Venta, one the earliest in Mesoamerica, was 110 feet high. Previously believed to be an intentionally fluted cone, many researchers now think the shape is a result of erosion.

The apparent lack of residential structures within the ceremonial core supports the conclusion that no one lived there—even the elite most likely lived in nearby San Andres. La Venta seems to have been a ritual center and commemorative site, an ideological construction designed to represent the political and religious beliefs of its builders. Stela 19 from La Venta is one of the earliest known representations of the common Mesoamerican feathered serpent deity (Figure 1.13). Depictions of human–animal hybrids, particularly jaguars, were another common motif. The figure emerging from Altar 5 is holding a half-human, half-jaguar baby (Figure 1.14).

While Tres Zapotes (Figure 1.15), with its important source of basalt, probably developed as a regional center near the Tuxtla Mountains as early as 1000 BCE, it may have become

1.13
Stela 19 La Venta

1.14
Altar 5 La Venta fragment



1.15
Tres Zapotes core

headquarters of the elite after the decline of La Venta. Unlike San Lorenzo and La Venta, the public architecture at this center implies less centralized leadership. The four temple mound groups, built about 400 years later than those at La Venta, were not organized hierarchically, which suggests that they all enjoyed equal claims to power. Archaeologists have found some early examples of the Mesoamerican calendar and writing at Tres Zapotes. Its continued occupation and cultural development after the general Olmec decline, reveals influences from other regions and societies. San Lorenzo and La Venta, however, seem to have been completely abandoned.

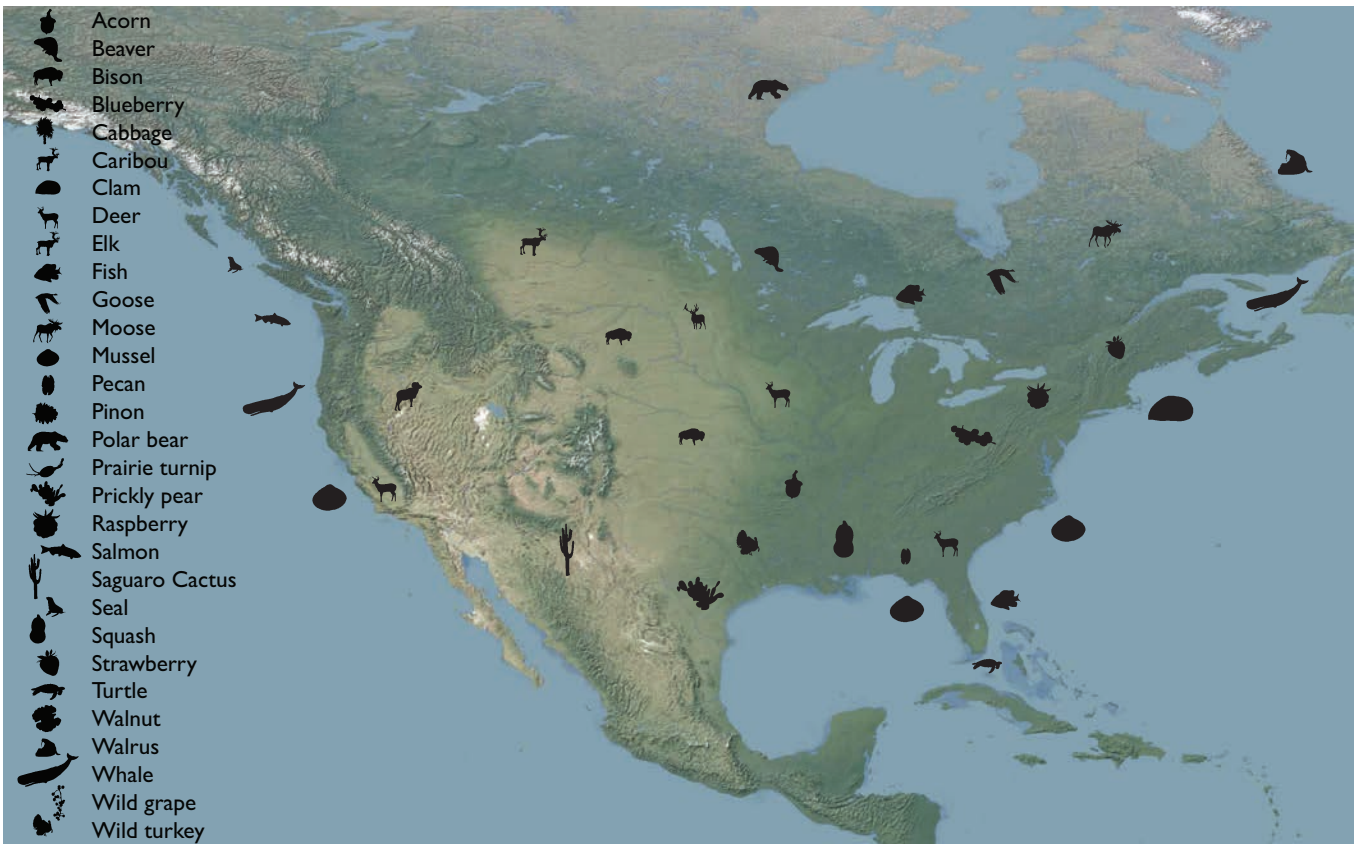
Eastern Northern America

Whatever new insights might emerge from the archaeological record, the significant ecological changes across most of Northern America at the end of the Pleistocene are uncontroversial.[24] The ice melted gradually, of course, but the contrast between the ice sheets and their successors—river basins, lakes, forests, and prairies—was stark. Large areas of the continent opened up for a diverse array of plants, animals, and people. Human exploitation of the newly rich resources in Northern America happened relatively quickly, but people remained quite mobile for much longer than some in South America and Mesoamerica—probably because the ecological changes were more dramatic and attenuated.

1.16
Eastern Northern America region

People in the Mississippi River Valley, along the Gulf and Atlantic coasts, and in the Eastern Woodlands—from Canada to Florida—enjoyed a wealth of resources within a large, easily traveled geographical region (Figure 1.17). As populations grew and territorial disputes emerged, some groups organized around landscape management practices and land use rights. These groups remained relatively small but socially distinct. Defining territories for subsistence became important instigators of cultural diversity in Eastern Northern America. While the whole area eventually developed into a relatively dense sprawl of agrarian villages of various sizes that were integrated into a much larger system by long distance trade, sedentary agriculture came much later than in the Andes and Mesoamerica. Most subsistence strategies in the broader region retained aspects of earlier fishing, foraging, and hunting patterns—and some groups remained dependent on wild plants and animals or managed landscapes—well into the time of contact with Europeans.

Although the evidence of early cultivation and domestication in what is now the eastern USA is very clear, some of the species that formed the earliest crops are no longer common on the world table. In ancient Northern America, chenopod, erect knotweed, little barley, marshelder, and maygrass produced seeds used for nutritious cereals and flours. The domesticated form of chenopod is now extinct. Cultivation of marshelder ended long before contact. Only the sunflower—now a major world crop—and squash survive as major food sources from the ancient Northern American list of cultivated and



1.17
Northern American resources

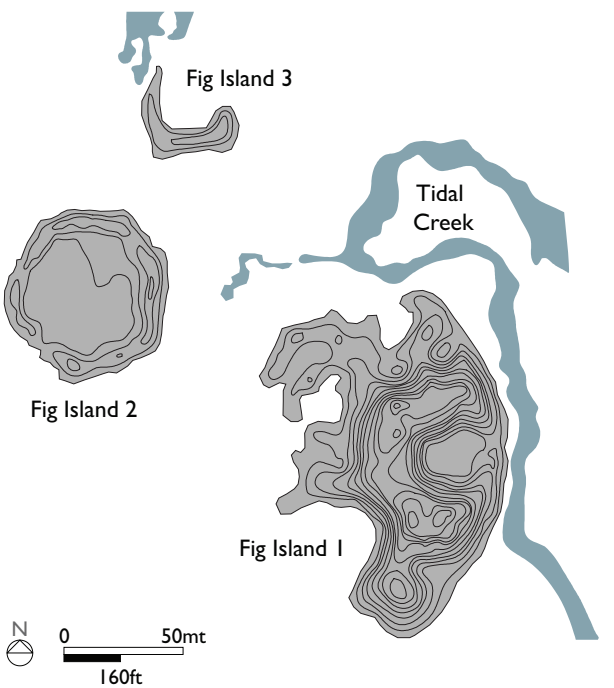
domesticated plants. Many scientists believe that the sunflower was first domesticated in the middle Mississippi Valley but recent evidence from Mexico suggests another, perhaps independent site of domestication. Tracking origins of domesticated plants such as the sunflower across the Americas—using pollen records near domestic sites—helps scholars of early settlement patterns understand what possible long-distance trade influences might have been at work. Although the relationships between early cultures in Mesoamerica and the Mississippi Valley are poorly understood, there were certainly contacts and substantial influences.

In the Mississippi Valley—like other parts of the Americas and many other parts of the world—one of the oldest and most persistent signs of collective construction is the artificial hill—usually called simply a mound in most discussions of Northern American archaeology. In this part of the Americas, the earliest mounds were constructed well before any permanent agricultural settlements appeared. The practice was widespread in Eastern Northern America by at least 3000 BCE. The remains of these ancient mounds (made of earth, stone, shells and other materials) test assumptions about the supposed lack of social complexity among non-sedentary cultures. Archaeologists believe many of the mounds served some sort of ritual purpose for hunting, fishing and foraging people.

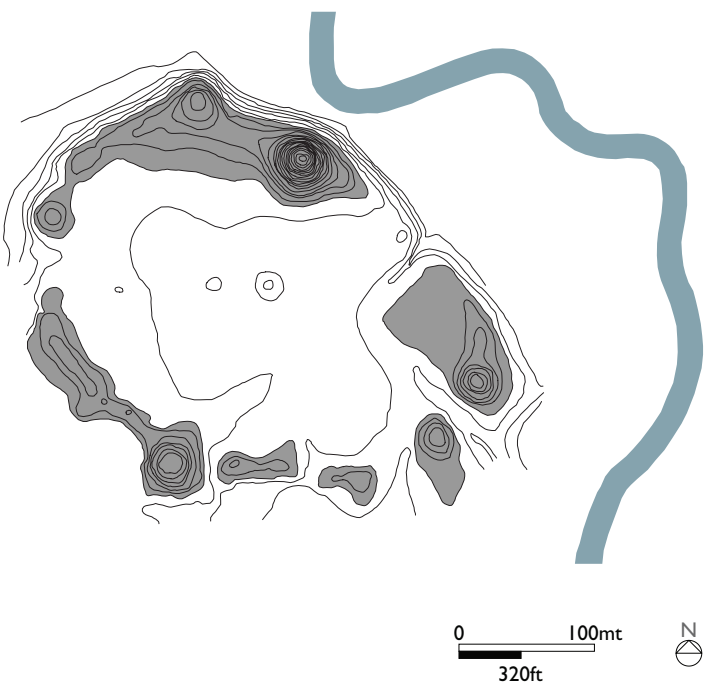
As with other collective building projects in South America and Mesoamerica, cosmological beliefs certainly guided some of these projects and compelled some people to build

them. On the other hand, the practical realities of large-scale collective public works implicate other social mechanisms and provoke other questions. Who did the work? Who organized the crews? Who guided the overall design? Who negotiated with people in other places for non-local materials? The answers to these questions are the goals of many contemporary research studies but they will inevitably point to forms of social complexity particular to the regional subsistence-settlement patterns of eastern Northern America. In most of the region, these monumental signs appeared "out of order," well before the agrarian village.

Some of the earliest known mounds, some as old as 7,500 years, are piles of shells—simple formations of conical and ring-shaped mounds (Figure 1.18). There is considerable debate about whether these mounds had ceremonial functions or were simply big piles of food waste. Some shell mounds contain burials, some do not. Some are located near sites with evidence of permanent year-round occupation; others appear to be seasonal camps. Feasting events certainly occurred at or near these mounds on a periodic basis over long segments of time. Although there is not a consistent body of evidence from the numerous known shell mounds in the eastern regions of Northern America to support any theories of intentional formal "design" strategies for the constructions, the piles of shells and other refuse inevitably assumed a monumental and permanent presence in the landscape over time. At some point in the history of many individual sites, the communities who returned to them periodically must have noticed their exceptional qualities. And for those communities that used the mounds as burial places, these forms must have become associated with individual and collective heritage.



1.18
Fig Island shell mounds, one of many known ancient shell mound sites in the Americas. There are many similar shell mound sites around the world.



1.19
Watson Brake mounds

At some point in the history of human interventions in the ancient landscapes of Eastern Northern America, mound construction became strictly intentional and symbolic. One of the oldest known sites of this type is Watson Brake, built over the course of 500 years starting at about 3500 BCE in the Ouachita River basin (Figure 1.19). Watson Brake consists of 11 mounds arranged around an open space in an oval of about 853 feet. The individual mounds range from 3 to 25 feet high and are connected by earth ridges. There is little evidence of inhabitation of the mounds and ridges and no burials or ceremonial artifacts have been found at the site. The purpose of the site is a mystery but its formal integrity leaves no room to doubt its builders' desire to make a permanent and special place at this location.

The most famous early mound site in the eastern part of Northern America, Poverty Point, is just 100 miles from the Watson Brake site (Figures 1.16 and 1.20). The constellation of earthworks built between 1650 and 700 BCE overlooking swamps alongside the Mississippi River—in what is now northeastern Louisiana—is one of the largest known indigenous constructions in this part of the Western Hemisphere. It is located within a region dotted with other mound complexes, some much older, but none as extravagant. The archaeological site, one of three UN World Heritage designates in the continental USA, is an exceptional place in many respects. Long considered an anomaly in the record of ancient settlement patterns in the United States, the place is still a mystery worthy of serious, sustained research by experts such as Kenneth Sassaman:

1.20
Point site map and geometries