

Landscapes of Preindustrial Urbanism



Dumbarton Oaks Colloquium on the History of Landscape Architecture XLI





Landscapes of Preindustrial Urbanism

Georges Farhat

Editor

© 2020 Dumbarton Oaks
Trustees for Harvard University, Washington, D.C.
All rights reserved.
Printed in the United States of America

LIBRARY OF CONGRESS CATALOGING-IN-PUBLICATION DATA

NAMES: Dumbarton Oaks Colloquium on the History of Landscape Architecture (41st : 2017 : Washington, D.C.) | Farhat, Georges, editor. | Dumbarton Oaks, host institution. | Dumbarton Oaks Colloquium on the History of Landscape Architecture.

TITLE: Landscapes of preindustrial urbanism / Georges Farhat, editor.

DESCRIPTION: Washington, D.C. : Dumbarton Oaks Research Library and Collection, [2020]. |

“Dumbarton Oaks Colloquium on the History of Landscape Architecture XLI”—Page preceding title page. | Includes bibliographical references and index. | Summary: “The use of the word ‘landscape’ to describe the formation and infrastructure of cities seems to express contemporary preoccupations with the postindustrial urban condition. The Industrial Revolution is often seen as a turning point in the emergence of the urban landscape of the modern metropolis, and the large city as commonly experienced today in the world is certainly dependent on a range of recent (or quite recent) breakthroughs in construction technology, climate control, communication, and transportation. In this view, urban landscapes are a historically late development and are, therefore, seen to embody an essentially modern and Western concept. But features associated with contemporary urban Landscapes—most notably the forms of human adaptation to and reshaping of the sites where cities develop and expand—can also be found in preindustrial contexts in different time periods and geographical regions. Preindustrial urban settlements generally occupied land that had been used for other, mostly productive, purposes, and their development involved complex and dynamic relationships with the management of natural resources. Such cities are traditionally studied as the centers of commerce, trade, and artisan production as well as the seats of secular and religious authorities; the essays in this volume to examine how the original clusters of agrarian communities evolved into urban formations”—Provided by publisher.

IDENTIFIERS: LCCN 2019047893 | ISBN 9780884024712 (hardcover)

SUBJECTS: LCSH: Urbanization—History—Congresses. | Land use—History—Congresses. | Land use, Urban—History—Congresses. | Human ecology—History—Congresses. | Urban archaeology—Congresses. | Landscape archaeology—Congresses. | LCGFT: Conference papers and proceedings.

CLASSIFICATION: LCC HT361.D85 2020 | DDC 712.09—dc23

LC record available at <https://lcn.loc.gov/2019047893>

Volume based on papers presented at the symposium “Landscapes of Pre-Industrial Cities,” held at the Dumbarton Oaks Research Library and Collection, Washington, D.C., on May 5–6, 2017.

GENERAL EDITORS: John Beardsley and Thaïsa Way

ART DIRECTOR: Kathleen Sparkes

DESIGN AND COMPOSITION: Melissa Tandysh

MANAGING EDITOR: Sara Taylor

COVER ILLUSTRATION: A prehistoric mounded site: Tell Surezha, Kurdistan region of Iraq. Drone photograph by Jason A. Ur, September 10, 2017.

FRONTISPIECE ILLUSTRATION: Lingas (phallic symbols of Hindu god Shiva) carved in the sandstone riverbed at Kbal Spean, ca. 1050 CE, Kulen Hills, upstream of Angkor, Siem Reap province, Cambodia. Photograph by Georges Farhat, July 2015.

www.doaks.org/publications

Programs in urban landscape studies at Dumbarton Oaks
are supported by a grant from the Andrew W. Mellon Foundation
through their initiative in Architecture, Urbanism, and the Humanities.



CONTENTS

Foreword ix

- 1 Bridging Remote Sensing and Worldviews**
Urban Landscapes from a Preindustrial Perspective 1
GEORGES FARHAT

PART I EARTHWORKS

- 2 Space and Structure in Early Mesopotamian Cities** 37
JASON A. UR
- 3 Landscape Change and Ceremonial Praxis in Medieval Rome**
From the Via Triumphalis to the Via Papalis 61
HENDRIK W. DEY
- 4 What Constituted Cahokian Urbanism?** 89
TIMOTHY R. PAUKETAT

PART II WATERSCAPES

- 5 Hydraulic Landscapes of Roman and Byzantine Cities** 115
JORDAN PICKETT
- 6 Monsoon Landscapes and Flexible Provisioning in the
Preindustrial Cities of the Indian Subcontinent** 143
MONICA L. SMITH
- 7 The Phnom Kulen Capital**
A Singular and Early Case of Landscape Construction in Ancient Cambodia 173
JEAN-BAPTISTE CHEVANCE
- 8 The Weave of Natural and Cultural Ecology**
Ekamrakshetra—the Historic Temple Town of Bhubaneswar, India 193
PRIYALEEN SINGH

PART III FORESTRY

9 **Xingu Garden Cities**

Amazonian Urban Landscapes, or What? 225

MICHAEL HECKENBERGER

10 **“when the King breaks a town he builds another”**

Politics, Slavery, and Constructed Urban Landscapes in Tropical West Africa 263

J. CAMERON MONROE

Epilogue 299

Contributors 303

Index 307

FOREWORD

In 2014, Dumbarton Oaks launched a new program in urban landscape studies funded by the Andrew W. Mellon Foundation through their initiative in Architecture, Urbanism, and the Humanities. Established by former Mellon executive vice president Mariët Westermann and the late Hilary Ballon, the initiative is intended to foster the joint contributions that the humanities and the design and planning disciplines make to understanding the processes and effects of burgeoning urbanization around the world. At Dumbarton Oaks, the program brings scholars and practitioners from multiple disciplines together to explore how urban environments as we know them today have emerged and how we might reimagine them for the future. The program involves three principal components: semester-long fellowships for both research and teaching projects, with additional opportunities for field research funding; a series of internal academic events that create a framework for interactions among the fellows as well as the humanities scholars at Dumbarton Oaks and neighboring academic institutions; and public programs, including lectures, colloquia, workshops, and publications, aimed at disseminating the initiative's work nationally and internationally.

This volume is the record of one of those public events, the proceedings of a symposium held May 5–6, 2017, under the title “Landscapes of Pre-Industrial Cities,” co-organized by Georges Farhat and me. The event built on a series of previous symposia and subsequent books, including *Food and the City* (2012 symposium; 2015 publication) and *River Cities, City Rivers* (2015 symposium; 2018 publication). While both those initiatives featured a wide geographical and chronological range of subjects, they each focused on one particular landscape-related topic, chiefly but not entirely from the perspective of modern and contemporary urbanism. What was needed next, we thought, was a still deeper history of urban formation, in yet wider geographical and cultural contexts, one that might explore the origins of city building in preindustrial societies and begin to reveal whether the relationships of these early cities to their landscapes were similar to or different from more recent urbanism. That is to say, we sought a landscape-specific analysis, one that examined the role of such factors as climate, topography, and physical resources in urbanization, along with more familiar geographical and chronological distinctions.

What we sought above all was to challenge some of the binaries that continue to characterize both urban and landscape studies: the dualities of cities and their hinterlands;

the natural and the built (or, in other terms, naturally occurring and socially produced environments); and the human and nonhuman actors in urbanization. Many of the urban landscape formations presented in this volume—large-scale, low-density “megasites,” “hydraulic cities,” or agro-urban landscapes—seem like hybrids between these binaries. At the same time, we wanted to avoid imposing a new duality between industrial and preindustrial urbanization. Indeed, we hope that the theories, methods, and technologies devoted to studying recent urbanism might be useful in approaching the distant past, even as preindustrial cities might shed light on the problems and opportunities of contemporary and emergent cities. This poses challenges to be sure. In particular, while applying current, cutting-edge technologies to the study of past urban landscapes can bring about tremendous breakthroughs in knowledge and interpretation, we should be careful not to collapse the equally tremendous differences between current cultural circumstances and those which produced past urban landscapes, in order, for instance, to avoid pushing recent ecological thinking into the distant past.

Given my imminent retirement from Dumbarton Oaks, I asked Georges if he would undertake on his own the considerable effort of editing this volume and composing its introduction. He graciously agreed, and has done a superb job on both fronts. I am grateful to him for seeing the project to completion. His enlightening introductory essay builds on a study by a multidisciplinary team he supervised in 2015–2016. Funded by Agence française de développement (AFD), the study initially aimed to assist local authorities in defining the “cultural landscape” of the 400 km² UNESCO World Heritage site comprising Vat Phou and associated ancient settlements in Champasak Province, Laos. Additional grants from University of Toronto (SSHRC) and Laboratoire de l’école d’architecture de Versailles allowed him to further conduct fieldwork across Southeast Asia and in Mexico.

We have had support from many other quarters over the life of this project. Colin McEwan and Elena Boeck, former directors of Pre-Columbian and Byzantine Studies, respectively, at Dumbarton Oaks, deserve particular credit for sustained conversations about the state of urban studies in their disciplines and for pointing us to potential speakers in their fields. Their participation ensured a strong representation of the ancient Mediterranean and the Americas in both the symposium and this volume. No less constructive were discussions with all the speakers at the symposium, including Suzanne Blier, Alan Kolata, Timothy Murtha, and Christophe Pottier, who were prevented by scheduling conflicts from submitting papers for this volume. We are also thankful to a host of other scholars for offering help and suggestions at key moments: Damian Evans, École française d’Extrême-Orient; Roland Fletcher, University of Sydney; Steven Kosiba, University of Minnesota; María Olvido Moreno-Guzmán and Fernanda Salazar, Universidad Nacional Autónoma de México; Eduardo Neves and Jennifer Watling, Universidade de São Paulo; Alceu Ranzi, Universidade Federal do Acre; and Silvia Segarra, Universidad de Granada.

A special acknowledgement is directed to the five anonymous readers who thoroughly reviewed either the volume as a whole or topics related to their own areas of expertise: the Americas, Africa, the Mediterranean and Near East, and South and

Southeast Asia. Lastly, this book could not have materialized without the unique academic endorsement and logistical support provided at Dumbarton Oaks through director Jan Ziolkowski's inspiring leadership and, in Garden and Landscape Studies, the involvement of program director Thaïsa Way, coordinator Jane Padelford, former assistant director Anatole Tchikine, and the senior fellows. The final outcome owes much to the efforts and rigor of an exceptional publications team, including copyeditor Magda Nakassis, designer Melissa Tandysh, managing editor Sara Taylor, and director Kathleen Sparkes. We thank them all.

Under the new leadership of Thaïsa Way, the Dumbarton Oaks Mellon Initiative in Urban Landscape Studies is being renewed through a deeper inquiry into the legacies of race, identity, and difference as they shape the practice of democracy in the city, while acknowledging the crucial importance of sustainability, adaptability, and resilience in urban systems. I have every confidence that the studies of urbanism and landscape will continue to become more closely intertwined at Dumbarton Oaks, even as the institution continues to honor its long commitment to the histories of gardens and designed landscapes.

John Beardsley

Director, Garden and Landscape Studies, 2008–2019

Space and Structure in Early Mesopotamian Cities

JASON A. UR

THE STUDY OF PREINDUSTRIAL CITIES IS IN A PHASE OF GREAT dynamism.¹ For a long time, early cities were viewed narrowly through the lenses of Classical and ancient Near Eastern urbanism. In archaeology, this situation emerged largely as a result of the great influence of V. Gordon Childe. His books and articles established a broad model of what an early city was supposed to look like; his seminal article on “The Urban Revolution” is the most heavily cited article in the history of the *Town Planning Review*.² His vision of cities emphasized the “revolutionary” appearance of relatively (for their time) large and dense settlements that housed a ruling class (and its monuments) that extracted the production of the rural hinterland. These new urban places were further characterized by writing systems, art and science, long-distance trade, and the abandonment of kinship as a source of social cohesion.

At this point, the critiques of Childe have largely been accepted. First and foremost, his characterization in “The Urban Revolution” is one of an early centralized polity—that is, a political form rather than a settlement form. More importantly, recent scholarship has convincingly demonstrated the remarkable diversity of early urban form, and it has argued, also convincingly, for a definition of “urbanism” that can accommodate such diversity.³ Indeed, for many current scholars, Childe’s “classic” formulation of the early city only really applies to the ancient Near East and the Mesopotamian examples that inspired him.

In fact, Childe’s model does not even apply to Mesopotamian urbanism, at least not in its early stages. The diversity of urban form now recognized globally can also be found in the earliest cities of the Tigris and Euphrates region. “The Urban Revolution” model is not, however, useless, as it describes mature Mesopotamian cities of the third

millennium BCE, and many subsequent urban places, quite well. But these cities came about with at least a millennium of previous urban development already behind them. They represent the end of a developmental process, not the start.

This study will illustrate three early Mesopotamian urban structures. They appeared sequentially, but not necessarily in an evolutionary sequence, from the late fifth to the middle of the third millennium BCE. The first, which appears to be unique in Mesopotamian history, seems to be a Near Eastern manifestation of a “megasite,” very large and low-density anomalies in the archaeological record, which in many parts of the world appeared prior to the appearance of less ambiguous urban forms. The second is a candidate for a Mesopotamian “low-density” city, a structure increasingly recognized globally but not yet in the Near East. Finally, at the time of the great Mesopotamian city-states, this study will argue that even the most geometric of settlement forms can be explained through the concept of emergence, as opposed to top-down planning.

In all of these cases, large settlements in early Mesopotamia were largely self-organized. Childe’s model may have emphasized new forms of centralized government in early cities, but a critical look at the archaeological data set of sites and landscapes suggests that bottom-up processes were dominant. It would be incorrect to call them “unplanned,” since all urban phenomena are planned at some scale; rather, the issue is the locus of decision-making about planning. Traditional scholarship on Mesopotamian cities assigns most agency to kings and other elites, who often claim such influence in propagandistic royal inscriptions. In the case studies presented here, emphasis has been placed on households and neighborhoods, and the ways in which decision-making at those lower levels might result in the emergent forms of the earliest Mesopotamian cities.

Geography and Chronology

The three case studies must be situated in Mesopotamian time and environmental space. The Mesopotamian landscape is dominated by two rivers, the Tigris to the east and the Euphrates to the west, which originate in Turkey, flow through northeastern Syria, and then drain through the Republic of Iraq to flow into the Persian Gulf (Figure 2.1). In the north, the landscape is variable. In the valleys, the rivers cut into floodplains, resulting in narrow bands of irrigable alluvium. Between the rivers is the arc of the Fertile Crescent, composed of broad plains where agriculture can be sustained by rainfall, although not without variability, and therefore some risk (Figure 2.2). It is in this “zone of uncertainty” that cities originated and developed.⁴

To the south, the rivers enter the southern Mesopotamian plain near Baghdad. From there to the gulf, the plain is unrelentingly flat (Figure 2.3). This lack of slope slows the rivers’ flow, causing them to drop their sediment loads. As a result, the Tigris and Euphrates flow a few meters above the level of the surrounding plain, on levees a few kilometers wide. In both north and south, the environment encouraged cereal agriculture as well as sheep and goat husbandry, and it provided clay and water for mud brick architecture. The high aridity of the southern plains prevents rain-fed cultivation.

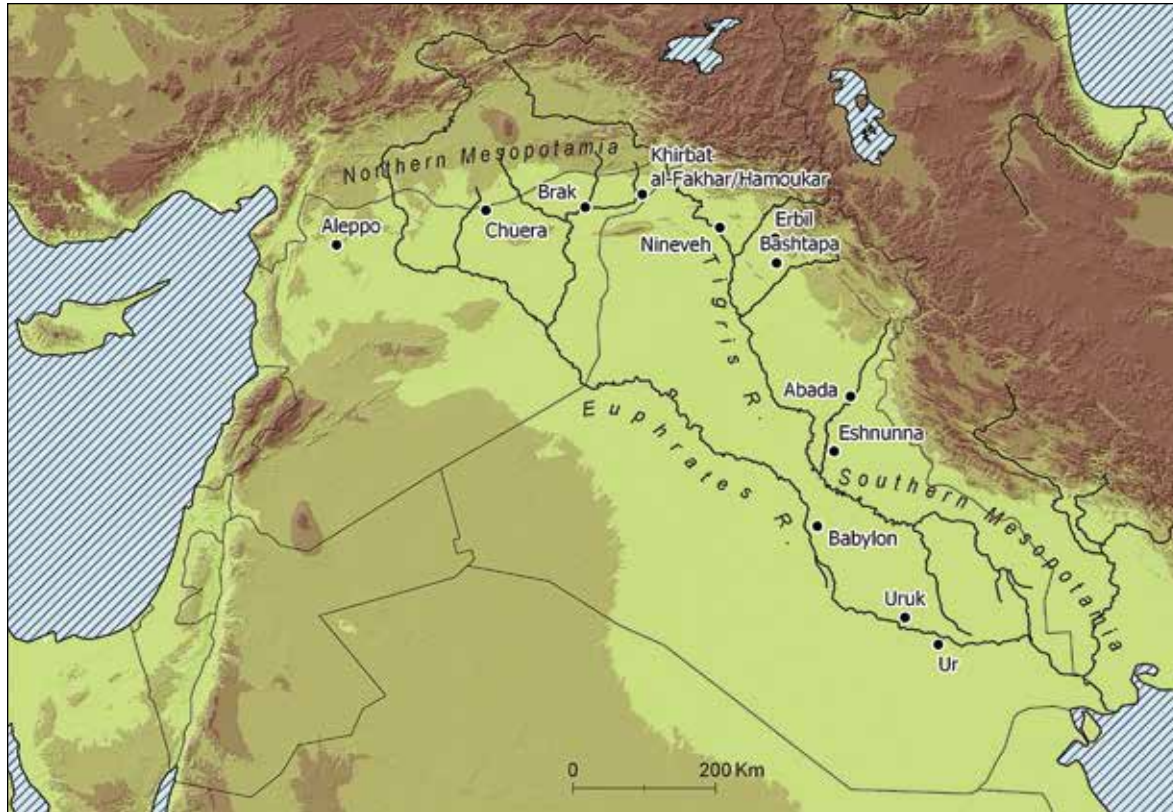


FIGURE 2.1
Mesopotamia, with
sites and regions
mentioned in the text.
Map by Jason A. Ur.

However, the river levees enabled crop irrigation and the low surface gradient encouraged low-friction water transport. As a result, mature cities in the south grew to many times the size of their northern contemporaries.⁵ In both north and south, the environmental conditions promoted the use of mud brick in most architectural forms, fired brick in some contexts, and stone in some foundations and elite constructions. Mesopotamia was the land of “cities of clay.”⁶

It was in this environmental context that Mesopotamian societies emerged and evolved. The archaeological cultures of Mesopotamian prehistory consisted of small agricultural villages in the Neolithic, which by the fifth millennium BCE had spread onto the southern plains (Figure 2.4).⁷ At this time, sites were characterized by a painted pottery designated as “Ubaid.” At the end of this period, an anomalously large settlement emerged at Khirbat al-Fakhar, in northern Mesopotamia, the first case study.

The fourth millennium BCE was highly consequential for the evolution of Mesopotamian cities. At the start of the millennium, Mesopotamia was divided into regional cultures that still lived in small, frequently fissioning villages. By its end, the city of Uruk in southern Mesopotamia had developed large institutions, with monumental architecture, mass production of craft goods, and administrative technologies that included sealing and pictographic writing—in other words, the “classic” Childean early city. In traditional urban histories and textbooks, Uruk is often described as “the

FIGURE 2.2

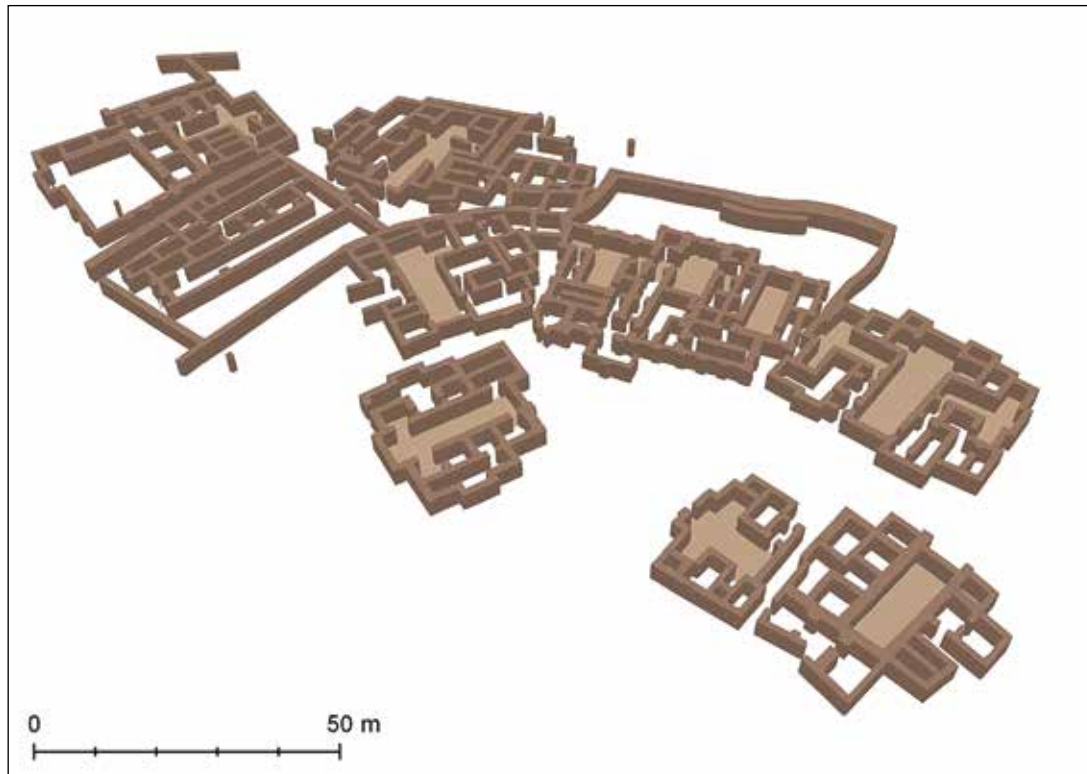
The rain-fed plains of northern Mesopotamia in late winter. Bashtapa, Erbil Governorate, Kurdistan region of Iraq, drone photograph taken February 23, 2017. Photograph by Khalil Barzinji.



FIGURE 2.3

An urban site on the plains of the south: the city of Ur. Drone photograph courtesy of Emily Hammer.





first city,” emerging by 3100 BCE.⁸ Recent archaeological research has demonstrated, however, that half a millennium earlier, Tell Brak, in northern Mesopotamia, had grown to urban stature, in very different forms and by a very different trajectory.

The start of the third millennium BCE saw a further regionalization. Northern settlements remained predominantly small villages. The south, on the other hand, entered a phase of hyperurbanization, in which nearly all settlements had grown larger than 40 ha. By the middle of the third millennium BCE, both north and south were characterized by the small and competing polities that were described in the Sumerian King List and that archaeologists have labeled as city-states.⁹ By this point, Mesopotamian urbanism appears to have attained a mature state that most historians and archaeologists assume to have become “essential,” and to have survived, more or less unchanged, in kind if not degree, through Sennacherib’s Nineveh or Nebuchadnezzar’s Babylon (Figure 2.5), until the coming of Alexander and new Greek-inspired urban forms.

These arguments hinge on the definition of “urbanism.” In archaeology, Childe’s trait list approach has been abandoned, increasingly for definitions that stress what cities do rather than what they looked like.¹⁰ This new intellectual trend has expanded the ranks of urban places, most notably by accommodating low-density or periodically depopulated centers in the New World. The method adopted here follows a multivariate approach—in which any given settlement can be placed along many “axes of variation”—that was championed by archaeologist George L. Cowgill.¹¹ These axes might

FIGURE 2.4

A small agricultural village of the preurban Ubaid period at Tell Abada, Iraq. Based on S. A. Jasim, “Structure and Function in an ‘Ubaid Village,’” in *Upon This Foundation: The ‘Ubaid Reconsidered*, ed. Elizabeth F. Henrickson and Ingolf Thuesen (Copenhagen: Carsten Niebuhr Institute, 1989), 79–90, fig. 2.

FIGURE 2.5

Reconstruction of the city of Babylon at the time of Nebuchadnezzar, typical of the “essential” form of Mesopotamian urbanism assumed for other times and places. Reproduced from Oscar Reuther, *Die Innenstadt Von Babylon (Merkes)*, *Ausgrabungen Der Deutschen Orient-Gesellschaft in Babylon 3* (Leipzig: J. C. Hinrichs, 1926), tafel 1.

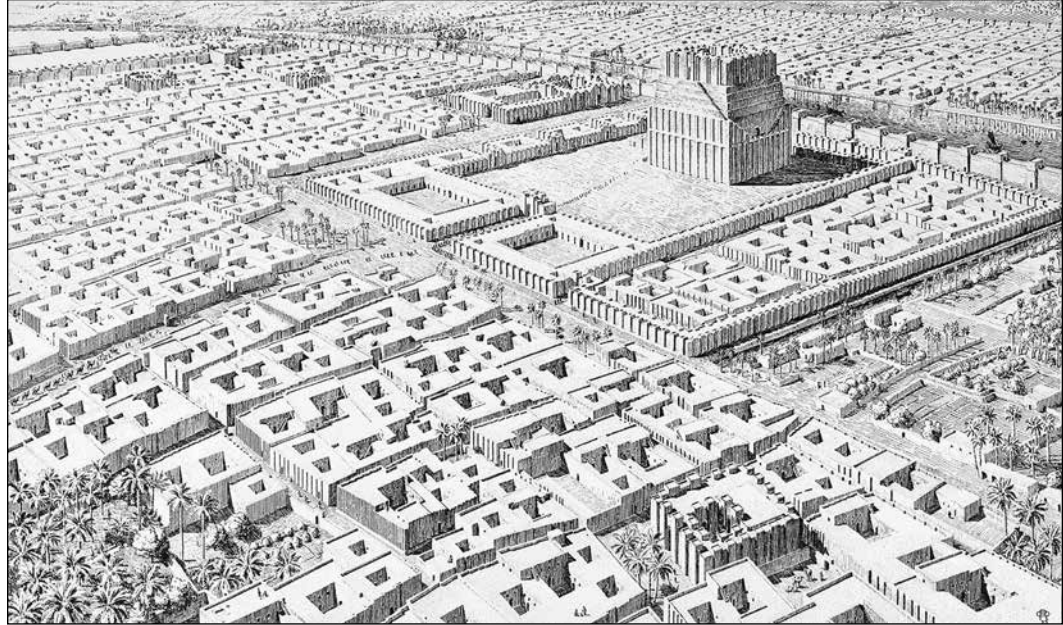


FIGURE 2.6

An example of historical remote sensing of archaeological sites and landscapes: a U2 aerial photograph of Tell Brak, Syria, showing its central mound, lower outer settlement, and linear trackways. U2 mission B1554 frame 200R, taken January 29, 1960. Photograph courtesy of the U.S. National Archives and Records Administration (NARA).



include obvious characteristics like size and density, but also more challenging ones, such as degrees of political centralization, religious authority, craft specialization, or wealth inequality. In the interests of critical discussion, the term will be used loosely, but mostly with reference to spatially large phenomena that have centripetal properties when their neighbors do not.

The proper study of early cities requires methodological innovation.¹² For a consideration of urban structure, excavation data are often too limited spatially and nearly always nonrepresentative of the whole. Other methods have emerged that are better suited to the large scale of investigations. The research presented here has, therefore, emphasized two extensive methods. First, remote-sensing sources can provide bird's-eye views of spatial phenomena that would be unrecognizable from the ground. Recent research has relied heavily on aerial photography and satellite imagery, especially declassified historical intelligence sources such as U2, CORONA, and HEXAGON; LiDAR data; and ground-based geophysical survey (Figure 2.6).¹³ Remotely sensed imagery can identify features, but it cannot date them; it must be followed up with well-designed surface observations. Therefore, the second method is systematic archaeological surface survey. Fortunately, Mesopotamian cities erode in a manner that makes surface survey of artifacts especially fruitful. In an ideal scenario, remote-sensing analysis and survey would be followed by targeted excavation.

Proto-Urbanism at the “Megasite” of Khirbat al-Fakhar

At the end of the fifth millennium BCE, the plains of northern and southern Mesopotamia were settled by small agricultural villages. However, at least one truly anomalous settlement had developed in the north. Khirbat al-Fakhar was identified in far northeastern Syria, near the border with Iraq, in 1999. It was surveyed systematically in 2000 and subject to brief excavation in 2005.¹⁴ It presents a challenge to several basic assumptions about urban origins: that the trajectory was outward from small village to large city; that this process was driven by improvements in subsistence agriculture; and that it occurred in a steady linear fashion. Khirbat al-Fakhar appears to contradict all of these assumptions.

At the very end of the Ubaid period, most settlements were small villages of up to two hundred persons. They grew vertically over generations. Mud brick architecture requires constant maintenance and occasional replacement, which is usually accomplished by leveling an old structure and building a new one atop its remains. As a result, the settlement grows upward through time (Figure 2.7). Vertical growth was not, however, accompanied by horizontal growth. In other words, communities remained in place, but must have been periodically riven by conflict, which resulted in settlement fission. As a result, most fifth-millennium BCE sites rarely exceed a few hectares. The plains of northern Mesopotamia are dotted with thousands of such small prehistoric mounds.

Khirbat al-Fakhar, on the other hand, took a radically different form. The site has a central core of low mounds, extending over 22 ha. Beyond this core, artifact scatters



FIGURE 2.7
A prehistoric
mounded site: Tell
Surezha, Kurdistan
region of Iraq. Drone
photograph taken
September 10, 2017.
Photograph by
Jason A. Ur.

continue outward across the fields. The total area of the scatter, including the central core, is at least 300 ha, a hundred times larger than most of the previous and contemporary sites in Mesopotamia. It is standard practice in Near Eastern archaeology to apply a ratio of one hundred to two hundred persons per hectare,¹⁵ in which case Khirbat al-Fakhar would have been a city of 30,000–60,000 persons in 4000 BCE.

It is certainly inappropriate to assume such density, however. There are no clues about density from excavation yet, but remote sensing can offer insight. In a 1959 U2 aerial photograph, the low areas of scatter are characterized by a discontinuous light discoloration, compared to the surrounding fields (Figure 2.8). Lighter soils result from the decay of mud brick architecture, and the pattern at Khirbat al-Fakhar suggests clusters of households with unoccupied voids between them. The overall site extent was great, but density appears to have been lower than is assumed from later models.

The surface assemblage may suggest one reason for this precociousness. It includes potsherds as well as obsidian flakes, blades, and even cores in tremendous numbers over the entire extent of the site. Chemical sourcing places their origins at a source hundreds of kilometers to the north.¹⁶ Khirbat al-Fakhar was, it would seem, a major manufacturing and distribution point for stone tools made of an exotic nonlocal material. Small-scale excavations near the site's center uncovered a residential structure, completely typical for this time period, and with evidence for the standard sedentary agropastoralist economy—but including a work space for the specialized production of obsidian blades. It seems likely, therefore, that the broad distribution of obsidian surface artifacts is hinting at a decentralized lithic industry organized at the household

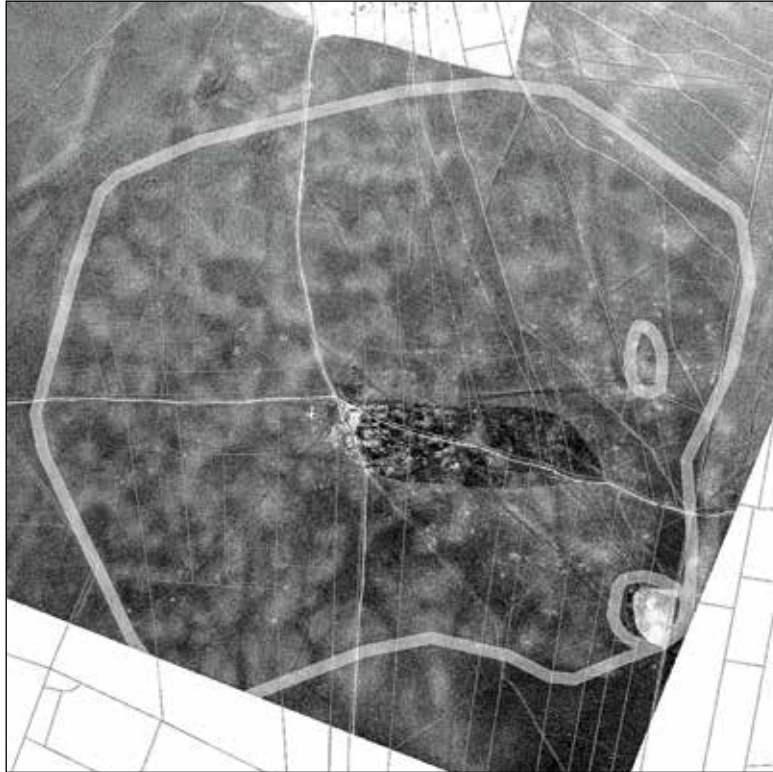


FIGURE 2.8

The low-density extensive settlement at Khirbat al-Fakhar, Syria: a) 1959 U2 aerial photograph, Mission B8648, acquired October 30, 1959; and b) interpretation showing discontinuous areas of settlement. Maps by Jason A. Ur; photograph courtesy of the U.S. National Archives and Records Administration (NARA).





level. In other words, every household at Khirbat al-Fakhar was producing this “specialized” product.

Khirbat al-Fakhar fits very uncomfortably within the traditional Mesopotamian urban model. It was very large, but not nucleated. The intrasettlement open spaces are very anomalous. If this were a Mesoamerican site, one might assume that households or extended family blocks were separated from each other by garden plots. At the present state of knowledge, such an interpretation could stand; the climate of the fifth millennium BCE was wetter and less seasonal than in later times or at present. But small villages contemporary to Khirbat al-Fakhar show no such intrasettlement open spaces.¹⁷ Alternatively, these vacant areas might be indicative of social distance. Khirbat al-Fakhar may have been composed of communities, more like a group of villages that happened to be semicontiguous with each other. In other words, its residents may have used space as a way of addressing or avoiding conflict. Nonetheless, people were motivated to come to this place, or to remain within it. In all likelihood, the motivation was economic: Khirbat al-Fakhar was an unambiguous center for trade and manufacturing of obsidian tools.

Although it seems very non-Mesopotamian, Khirbat al-Fakhar fits in well with other so-called megasites, or anomalous giants. These sites were large and precocious low-density settlements that have now been identified globally, but are most clearly described for the Trypillia settlements of Ukraine.¹⁸ Megasites are diverse in many ways, but they have several properties in common. Their histories of occupation are brief, and they show a lack of connection with subsequent urban developments. At present, Khirbat al-Fakhar is unique in Mesopotamian prehistory, but this circumstance may have resulted from an overreliance on the traditional model of urbanism by archaeologists. With Khirbat al-Fakhar as an established model, we might expect that other such settlement forms may be recognized in the future.



Low-Density Urban Origins at Tell Brak

A second case study comes from Tell Brak, 80 km to the west of Khirbat al-Fakhar. Its expansion occurred a few centuries later, and it proved to be more durable. Today, the site of Tell Brak has a large central mound and a broad outer zone of settlement that is close to plain level (Figure 2.9). Its origins are unclear but are to be placed sometime prior to the mid-fifth millennium BCE, and settlement persevered as late as the early Islamic period, with some phases of abandonment over that long time span. This complex history presents great challenges to archaeological research, especially excavation. Its central mound has been under intensive investigation since the mid-1970s. In the 2000s, its outer town came under investigation, first via an intensive systematic surface collection, which documented about fifty thousand artifacts in nearly a thousand collection units across the site, and subsequently by targeted excavation.¹⁹ The spatial distribution of chronologically sensitive artifacts from the surface collection permits the reconstruction of Brak's settlement over several millennia, and is the primary basis for the analysis of its urban structure (Figure 2.10).

The origins of the settlement are deeply buried in the core of the central mound and remain inaccessible to archaeologists. It can be assumed, however, that a small agricultural village already existed at the site in 4100 BCE, when small satellite areas of 1–4 ha began to appear in a halo around it, at a distance of 500 m (Figure 2.11a). Including the central mound, the area of this settlement was fifty-five hectares—five to ten times the size of any of its contemporaries.²⁰ The central mound was not collected as part of this survey because it had been so transformed by archaeological excavation, but these excavations suggest that it was already fully settled.

As at Khirbat al-Fakhar, Brak shows a pattern of settled areas with intervening vacant space. Again, this pattern might signal intrasettlement cultivation, but these discrete

FIGURE 2.9

The site of Tell Brak, northeastern Syria. Photograph by Jason A. Ur.

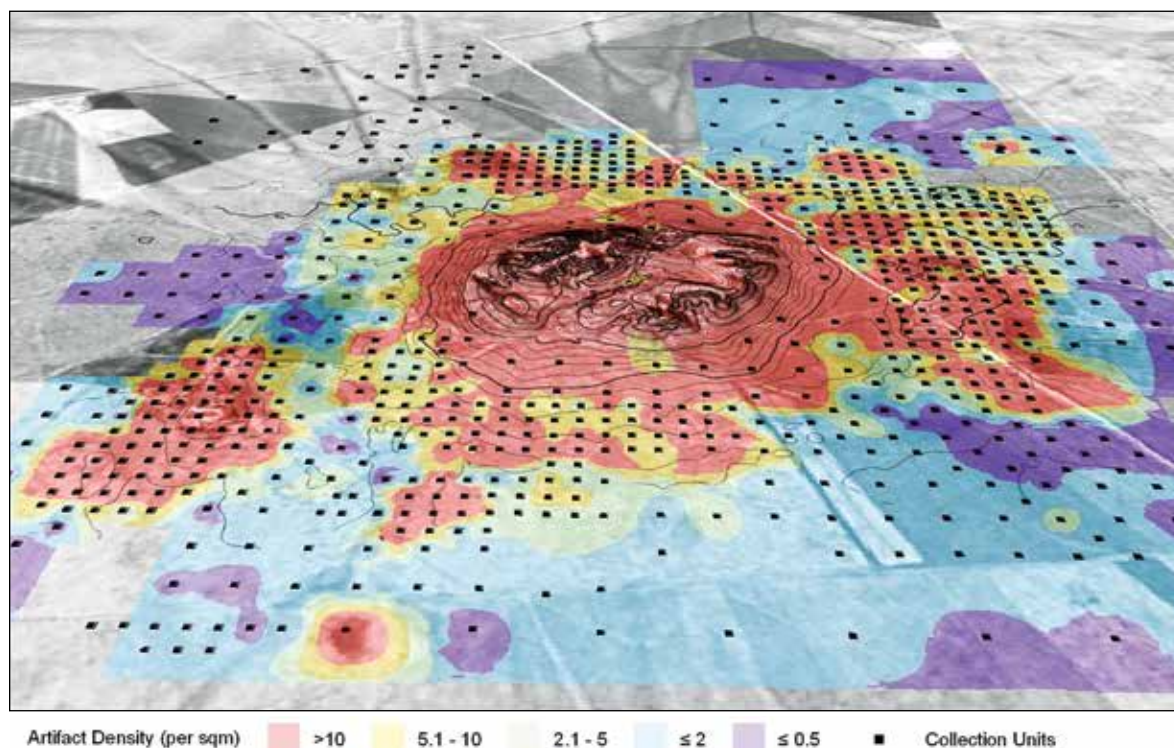


FIGURE 2.10
Surface artifact density
and collection units
across Tell Brak. Black
squares are 10 × 10 m
collection units. Map
by Jason A. Ur.

communities were also maintaining space in between them as a way of preserving social distance. As at Khirbat al-Fakhar some centuries earlier, some centripetal force was at work, but not yet a social mechanism for conflict resolution.

The two sites have some major differences, however. For one, Brak's satellite communities were more strongly isolated from one another and from the central settlement. Furthermore, Brak's satellite communities were not short-lived phenomena; they persevered and expanded. The distribution of surface artifacts of the mid-fourth millennium BCE covered 130 ha, about ten times the size of its nearest rival (Figure 2.11b).²¹

This spatial pattern of growth is unexpected. Rather than growing from a core settlement outward, Brak began as a large but dispersed constellation of core and satellite neighborhoods, with growth proceeding inward. After some three or four centuries, the end product was a dense and nucleated settlement, approaching the "classic" Near Eastern formulation described by Childe and others.

The settlement process at Brak is best interpreted through the lens of self-organization, in which individuals or communities opted in to the Brak settlement for their own reasons, but remained wary of others at the site. It was argued above that a few centuries earlier, an economic impetus drove immigration to Khirbat al-Fakhar. The impetus at Brak may have been ideological. Excavations on the high mound have documented a large structure on a monumental mud brick platform. The interior of the building was ornately decorated, and deposited within were thousands of small figurines

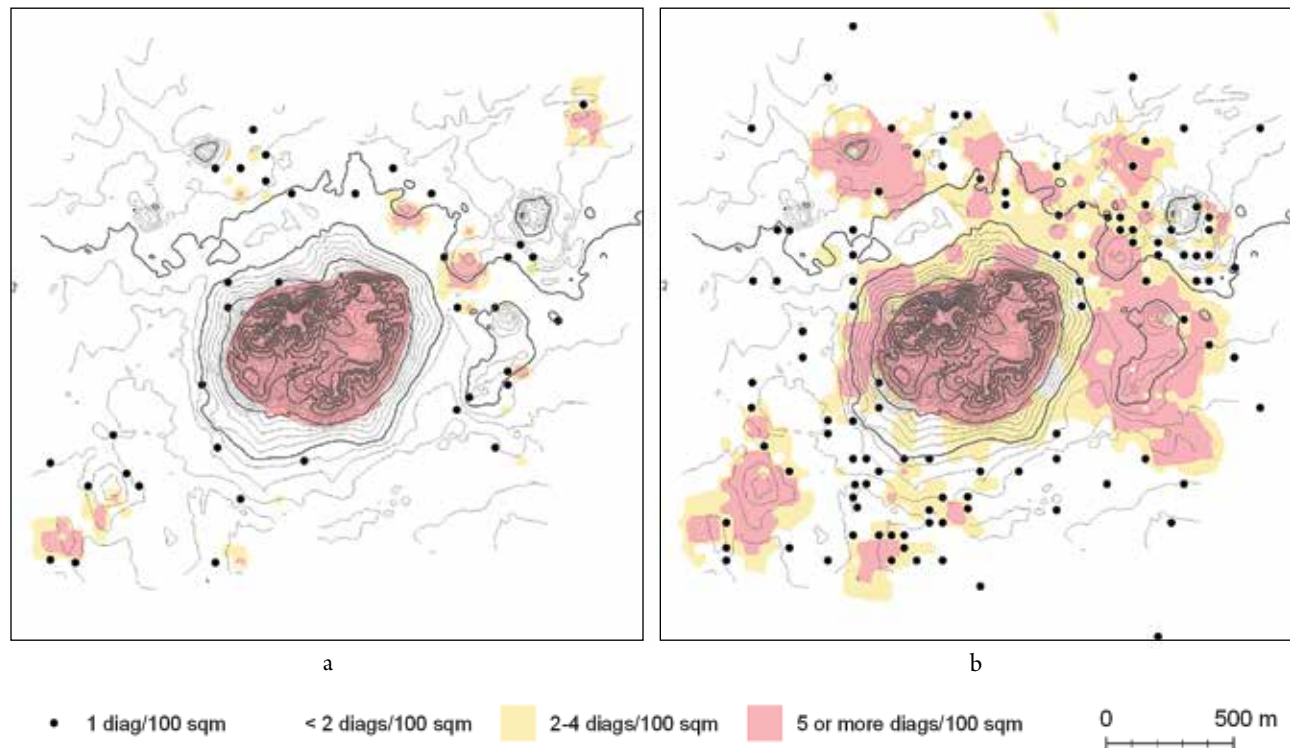


FIGURE 2.11
Distribution of surface artifacts
at Tell Brak: a) Brak covered
55 ha by ca. 4100–3800 BCE;
and b) Brak had grown to
130 ha by ca. 3800–3400 BCE.
Map by Jason A. Ur.

that give the building its name, the Eye Temple (Figure 2.12).²² Communities may have been inspired to immigrate to Brak to bring them closer to divine powers. In later times, divine households (“temples”) were also powerful economic engines, with extensive landholdings and the ability to mobilize large numbers of workers, but it remains to be established if they served a similar role in the fourth millennium BCE. Challenging this proposal is the date of the Eye Temple; its earliest-known form appears to coincide with the late expansion of the city. Hence, it may be a result of urban cohesion, rather than part of the original impetus for immigration. Further excavation will be required to evaluate this hypothesis.

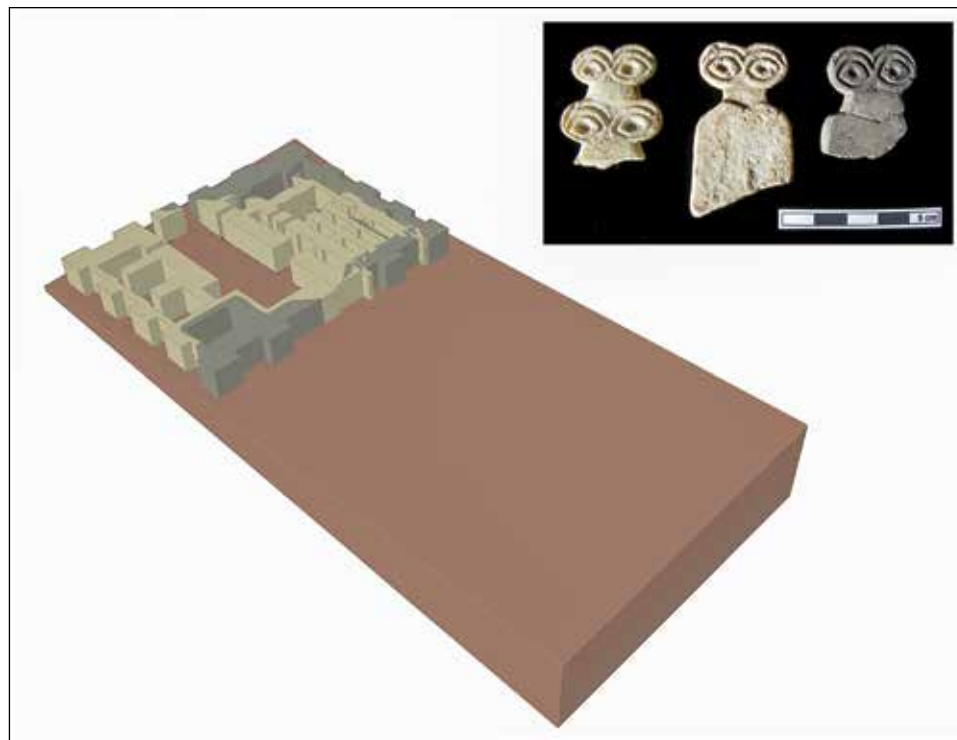
At Brak, it appears that urban institutions ultimately did develop to keep conflict in check, but the urbanization process was not a smooth one. Salvage excavations have revealed at least one, and possibly several episodes of violence. On the northern fringe of the fourth-millennium BCE city, excavations have revealed at least 230 human bodies, in various states of disarticulation.²³ These bodies were unburied and appear to have been feasted over before being discarded with other refuse at the city’s edge. Given that Brak had no apparent rival, these bodies were probably the losers in the social strife that was part of the city’s initial growth.

These events at Brak took place centuries before Uruk assumed the form that we know from countless textbooks, the oft-repeated “World’s First City.” Uruk’s urban core is vividly well known on account of German research throughout the twentieth century (Figure 2.13). Extensive excavation was concentrated exclusively on the central core of

FIGURE 2.12

The Eye Temple at Tell Brak. Its base platform is approximately 65×32 meters.

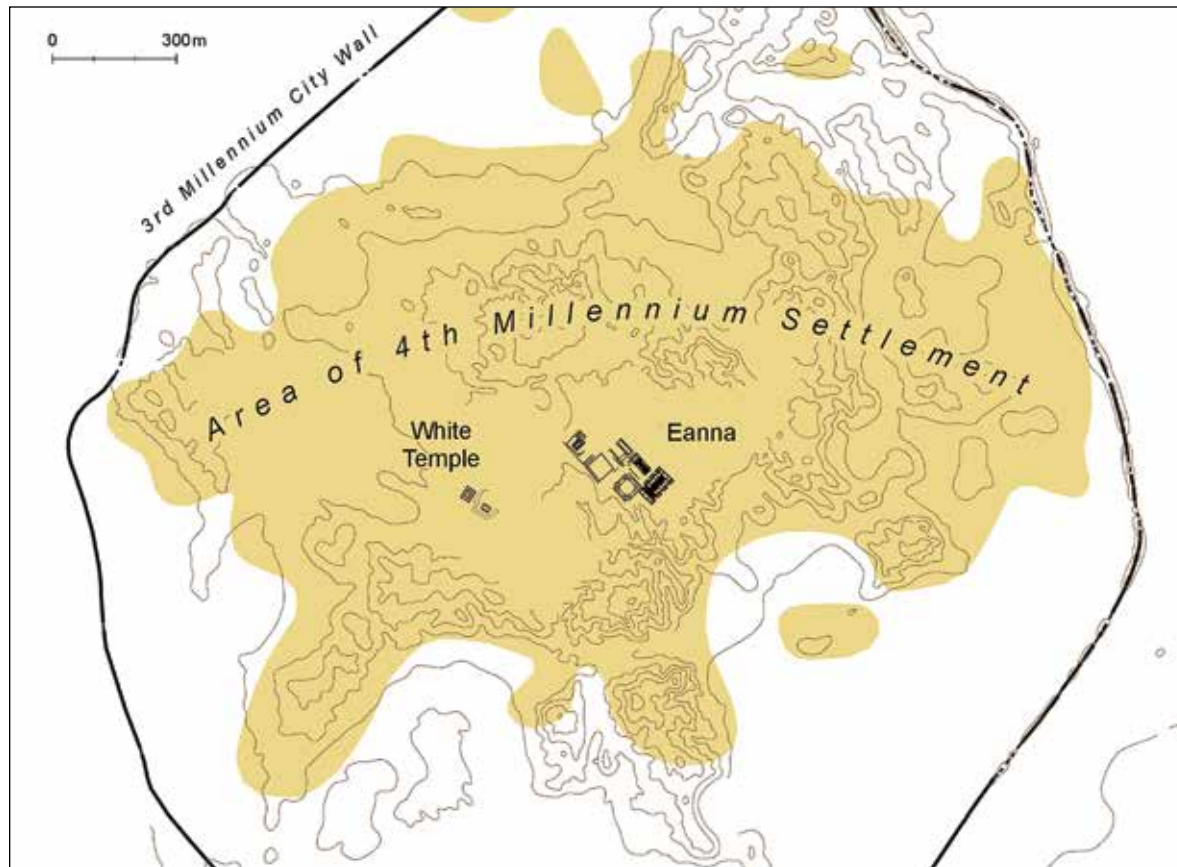
Inset: Small “Eye Idol” figurines found within the Eye Temple. Courtesy of Augusta McMahon/Tell Brak Project.



the city, where it revealed a series of enormous structures that are often described as “temples.”²⁴ When compared to the Eye Temple from Brak, and other domestic structures from northern Mesopotamian cities, it is clear that they are dramatically different in scale, but all adhere to the same tripartite organizing principle.²⁵ The earliest pictographic tablets were found dumped into the fill of these buildings.

Given Childe’s interest in Uruk, and its place in his urban revolution one might assume that these monumental structures sat amid a dense urban fabric of residential neighborhoods, where the majority of the city’s population lived. Despite the durability of Childe’s model, it has yet to be tested at Uruk itself. After nearly a century of excavation, not a single “private” (i.e., small-scale domestic, as opposed to large institutional) house of the fourth millennium BCE has been excavated at Uruk; the priorities of the excavators revolved entirely around monumental architecture. Nonetheless, it seems likely that such neighborhoods existed, given the scatter of pottery over some 250 ha.²⁶ Uruk’s settlement history was long and convoluted, leaving a complex surface assemblage that is far more difficult to interpret than Brak’s.

Uruk is a very important place for the history of urbanism, and it will continue to have a critical place in discussions of early world urbanism. We cannot forget, however, that its spatial patterning, as incompletely reconstructed by archaeology, captures its urban state at the end of the fourth millennium BCE, and most probably at the end of a centuries-long developmental sequence. The excavators privileged horizontal exposure over deep soundings, so we have a marvelous snapshot of Uruk at its height, but know nearly nothing of



its origins. The oft-reproduced plan of the city is the result of as much as a millennium of urban evolution; it cannot be used to discuss Uruk's urbanization process. It therefore remains entirely possible that Uruk's pattern of growth also proceeded from low to high density, and inward. It remains to be determined whether the earlier sequence described for Tell Brak in northern Mesopotamia was replicated at Uruk in southern Mesopotamia.

High-Density Self-Organized Cities of the Early Bronze Age

The third case study comes from the middle of the third millennium BCE, the time of the great Sumerian city-states on the southern plains. It is not an examination of an individual city, but rather a review and reinterpretation of the extensive data set of urban structure from this time. After more than a millennium of urban evolution, Mesopotamian cities had arrived at the "classic" nucleated form famously described by Childe and others.²⁷ They were densely occupied, with narrow streets that articulated with gates in monumental city walls. The use of cuneiform writing had expanded; it was the primary administrative tool for large institutional households, some religious and some apparently secular, that had wide landholdings and incorporated hundreds of people (Figure 2.14).

FIGURE 2.13

The site of Uruk, ca. 3100 BCE. Based on Uwe Finkbeiner, ed., *Uruk Kampagne 35–37 1982–1984: Die Archäologische Oberflächenuntersuchung (Survey), Ausgrabungen in Uruk-Warka Endberichte Band 4* (Mainz: Philipp von Zabern, 1991).



FIGURE 2.14
The “classic” form
of Early Bronze
Age urbanism
in southern
Mesopotamia:
the urban fabric
of Tell Asmar
(ancient Eshnunna),
ca. 2300 BCE. Map
by Jason A. Ur.

Northern Mesopotamian Early Bronze Age cities were structurally similar in many ways, but they were fewer, smaller, and more dispersed than those of the Sumerian plains.²⁸ They contained similarly dense residential neighborhoods, city walls, and large institutions. Nearly all appear to have grown according to a model in which an initial small village grew outward while retaining its population at its core, which formed a central elevated part of the settlement (Figure 2.15). Growth and immigration were accommodated by adjacent areas of former cropland (the prior infields) turned into residential space.²⁹

Early Bronze Age cities stretched across the lower fringes of the Fertile Crescent, from the plains around Aleppo in the west to Nineveh in the east. Until the Syrian civil war of 2011, their remains were some of the most intensively investigated sites in the Near East. Their excavators focused on elite monumental architecture, so it is, therefore, no surprise that their interpretations posit centralized planning behind urban development. Palaces, temples, and city walls all require architectural planning, but centralized planning at the level of entire neighborhoods has also been proposed.³⁰

Some archaeologists even see planning and designers behind the structure of entire cities. For example, during the Early Bronze Age, several urban settlements in Syria had strongly circular plans. Geophysical surveys have revealed street patterns of outwardly radiating spokes connected by rings and culminating in circular outer walls. The excavator of Tell Chuera, the largest and best studied of these circular sites, has stated that its structure and features “are all nothing else but the result of preconceived central planning.”³¹

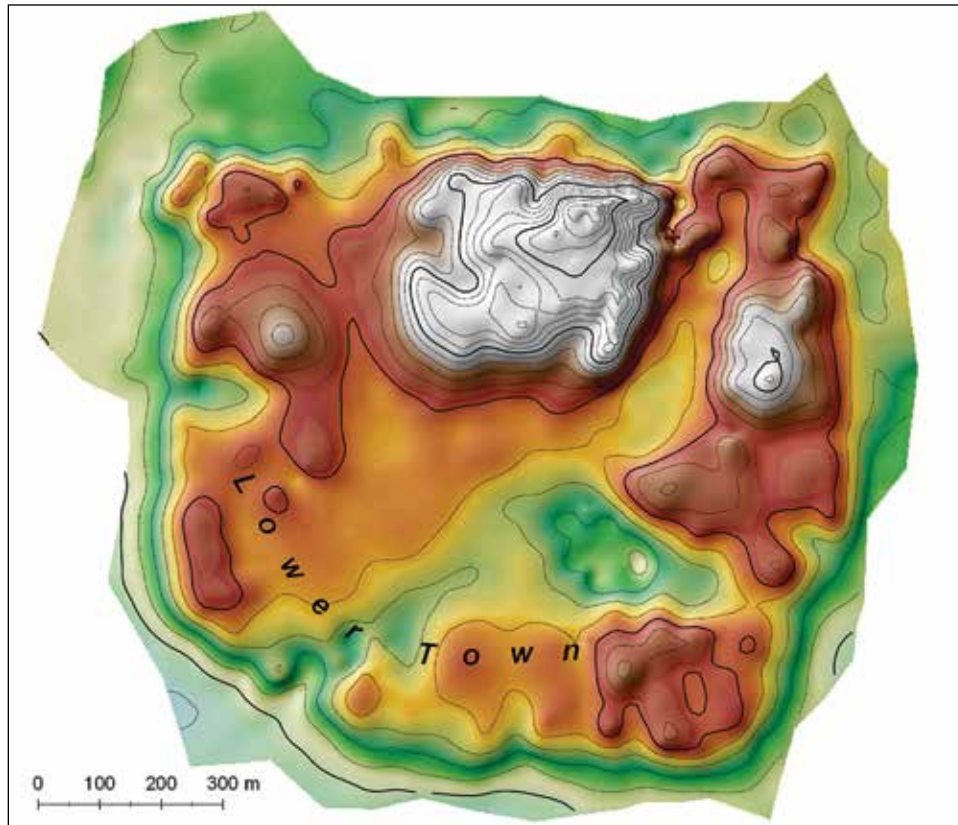


FIGURE 2.15

Urban form in Early Bronze Age northern Mesopotamia: Hamoukar, Syria. The fourth-millennium BCE town has been located under the high mound at north; in the middle of the third millennium BCE, settlement expanded to form a lower town to the east, south, and west of the old mound. Similar growth patterns can be described at most other Early Bronze Age cities of northern Mesopotamia. Contours at 1 m interval. Map by Jason A. Ur.

Whether at the scale of the neighborhood or the entire city, these interpretations assume planners who designed and implemented major spatial changes to existing settlements. Despite the geometric regularities of Chuera and other Early Bronze Age cities, however, they were still largely the products of self-organization, although not without some top-down elite intervention. To make this argument, one must first look beyond the settlement at the broader landscape. Early Bronze Age sites of all sizes are surrounded by linear depressions that mark the former locations of trackways. These features are nearly impossible to see on the ground, but are often highly visible from space. Most frequently, tracks radiated outward from a central mound, generally for 1–3 km before fading out, although a minority do connect to other sites. Declassified intelligence satellite photographs from the 1960s and 1970s have enabled the mapping of over 6,000 km of ancient tracks across northern Mesopotamia (Figure 2.16). Almost all of them can be dated by association to the Early Bronze Age.³²

These tracks proved to be the most critical structural element in the formation of Early Bronze Age cities, the features around which their structural regularities emerged. Farmers, herders, and animals took the shortest routes available to their fields and pastures. In doing so, they obeyed local land tenure rights; in other words, they did not cut across fields and trample crops, but rather adhered to existing tracks. When pressures from population growth necessitated the conversion of farmland into new

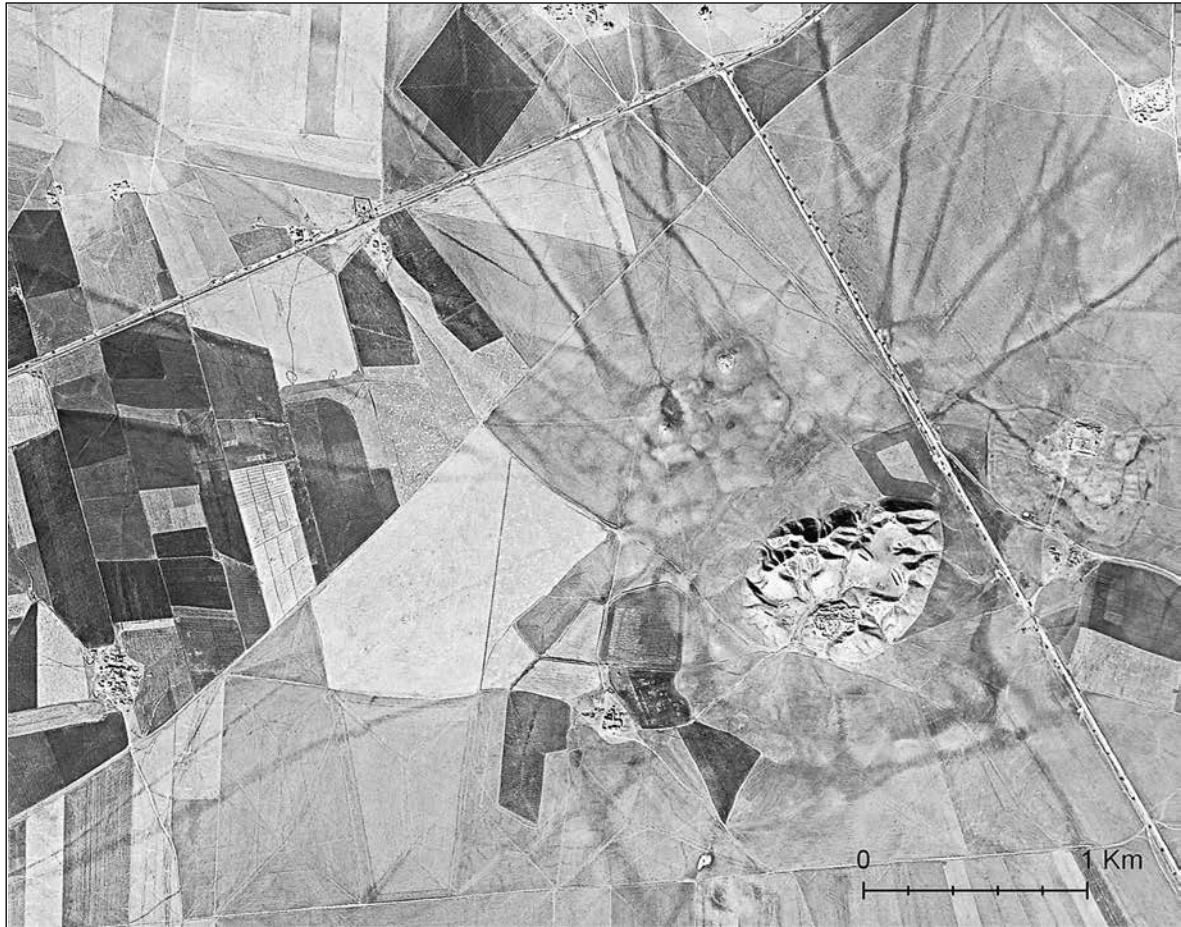


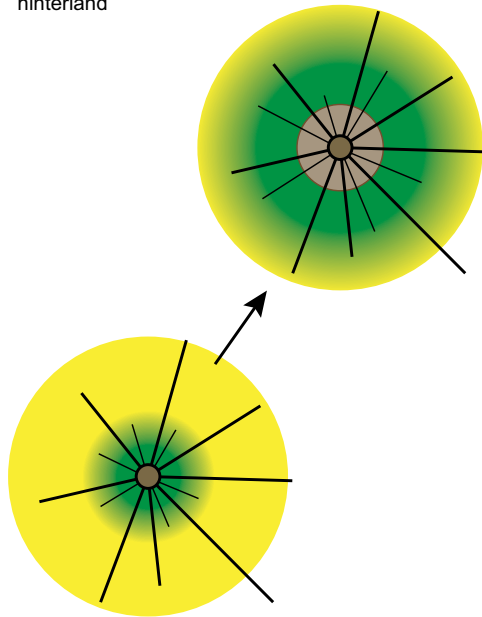
FIGURE 2.16
Linear trackways (“hollow
ways”) around Tell Brak,
Syria, in a declassified
KH-9 HEXAGON
satellite photograph.
Mission 1211, acquired
December 12, 1975.
Photograph courtesy
of the U.S. National
Archives and Records
Administration (NARA).

residential land, the farmland closest to the settlement was most likely to be first, but the preexisting tracks would remain as public corridors of movement. These processes represent a set of “local rules” that would have been followed by the settlement’s residents, simply by custom rather than via coercion by elite authorities.

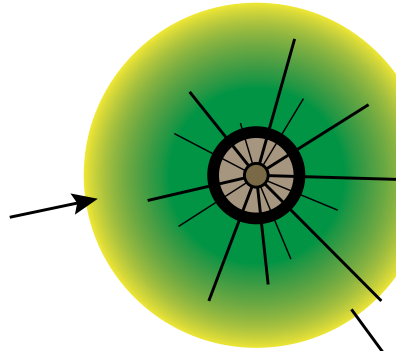
With these rules in mind, one can imagine a scenario by which a village might have grown into a city (Figure 2.17).³³ The village’s farmers cultivated land close to their settlement; beyond, its shepherds grazed animals. With population growth, immigration, or both, landowners converted arable land adjacent to the old village into areas of housing. Because they were viewed as public spaces, the former tracks through the fields were not built over, but rather became urban streets. At some point, authorities (perhaps the landowners) built a city wall, thereby formalizing what had been up to that point an emergent process driven mostly by local rules. In a few particular cases, further growth led to the conversion of more agricultural land under the same rules. The city wall would lose its defensive function and become incorporated into nearby houses. If necessary, this phase of growth beyond the old city wall might again be formally recognized with a new city wall. Following abandonment, the mud brick

Stage 2: Growth

Lower town settlement buildup along existing tracks, adjacent to old village; circular track/open space at settlement edge; expansion of agricultural hinterland



Stage 1: Initial agricultural village
and its sustaining area

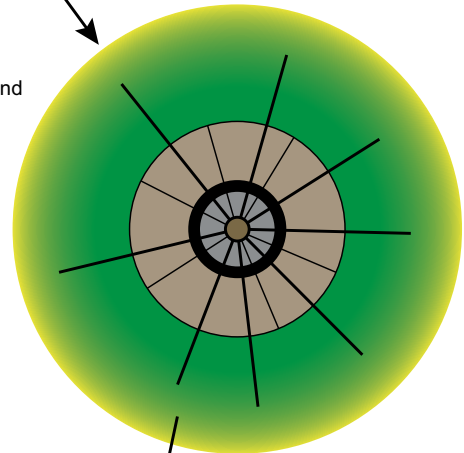


Stage 3: Formalization

City rulers formalize outer edge of settlement with wall; increase in settlement density; expansion of agricultural hinterland

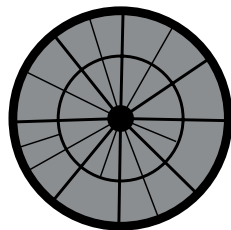
Stage 4: Further growth

Settlement expands beyond wall, former extramural paths evolve into streets; expansion of agricultural hinterland



Stage 5: Formalization

Lower town growth formalized with city wall; old inner wall no longer maintained but preserved as ring street



Stage 6: Archaeological site formation,
structure revealed by geophysics
and/or excavation

FIGURE 2.17

Schematic depiction of the self-organized evolution of a Mesopotamian city. Illustration by Jason A. Ur.

architecture of the former city would decay into an archaeological site, very similar to the pattern shown in geophysical surveys.

This developmental scenario is hypothetical; no archaeological excavation has been both broad and deep enough to demonstrate it empirically. All the local rules can, however, be demonstrated in the historical growth patterns of cities, particularly those of the Mediterranean.³⁴ For the Mesopotamian Bronze Age, historians and archaeologists have concentrated intensely on the elements of top-down formalization: temples and palaces, and the royal formalization of settlement growth via city walls. Such interventions by central authorities (“planners”) were indeed more frequent and more structurally consequential in the Early Bronze Age than they were in earlier times. Nonetheless, the underlying self-organized character of Mesopotamian cities still dominated, if one looks closely.³⁵

Conclusions:

Variability and Self-Organization in Early Mesopotamian Cities

By this point, it should be noncontroversial to state that early Mesopotamian cities were highly variable in their structure, and that these structures differed from the canonical model known from the influential writings of Childe and reproduced in textbooks and comparative studies. These conclusions are based on the last two decades of field research in northern Mesopotamia as reviewed above, but one might hope that they will spur new research on the southern plains, as research begins to reemerge after a generation’s absence.

To a great degree, early Mesopotamian cities invented themselves, albeit in different ways and at different times. Powerful elites could and did make interventions in them, but these interventions were either localized, such as the construction of a temple or palace, or were reactive to emergent forces—for example, when a king commissioned a city wall around bottom-up urban growth. For “great men” to populate our archaeological narratives, one can always turn to the kings of Assyria in the first millennium BCE, who truly did commission cities, and indeed entire landscapes, sometimes more or less out of whole cloth. But such centralization of political authority just did not exist prior to that time, despite grandiose claims by rulers.³⁶ To extend such authority back into the Bronze Age, or into the time of urban origins, creates the sort of timeless Orientalist state that archaeologists and historians should be critiquing. Models that acknowledge a high degree of self-organization, such as the three case studies presented above, give agency to all residents of these precocious places in the formation of urban structure. Such models will, one would hope, inspire archaeologists to explore early Mesopotamian cities more holistically in the future.

Notes

- 1 This essay is an attempt to synthesize almost two decades of fieldwork across several projects; therefore, it comes with a long list of people to acknowledge. Khirbat al-Fakhar/Hamoukar: McGuire Gibson, Tony Wilkinson, Salam al-Quntar, Carlo Colantoni, Lamya Khalidi, and Amr al-Azm; Tell Brak: Joan and David Oates, Geoff Emberling, Augusta McMahon, Henry Wright, Philip Karsgaard, Shilan Ramadan, and Fahad Aljomaa. Permission to conduct these research projects was graciously provided by the Syrian Directorate-General of Antiquities and Museums in Damascus. Funding came from Harvard University, University of Chicago, University of Michigan, University of Cambridge, and the American Schools of Oriental Research Mesopotamian Fellowship.
- 2 V. Gordon Childe, "The Urban Revolution," *Town Planning Review* 21, no. 1 (1950):3–17; and V. Gordon Childe, *New Light on the Most Ancient East: The Oriental Prelude to European Prehistory*, rev. ed. (New York: W. W. Norton and Company, 1952). For the legacy of his "Urban Revolution," see Michael E. Smith, "V. Gordon Childe and the Urban Revolution: A Historical Perspective on a Revolution in Urban Studies," *Town Planning Review* 80, no. 1 (2009):3–29.
- 3 Two clear recent reviews are Arlen F. Chase and Diane Z. Chase, "Urbanism and Anthropogenic Landscapes," *Annual Review of Anthropology* 45 (2016):361–76; and George L. Cowgill, "Origins and Development of Urbanism: Archaeological Perspectives," *Annual Review of Anthropology* 33 (2004):525–49.
- 4 T. J. Wilkinson, *Archaeological Landscapes of the Near East* (Tucson: University of Arizona Press, 2003).
- 5 Harvey Weiss, "The Origins of Tell Leilan and the Conquest of Space in Third Millennium Mesopotamia," in *The Origins of Cities in Dry-Farming Syria and Mesopotamia in the Third Millennium BC*, ed. Harvey Weiss (Guilford, Conn.: Four Quarters, 1986), 71–108; T. J. Wilkinson, "The Structure and Dynamics of Dry-Farming States in Upper Mesopotamia," *Current Anthropology* 35 (1994):483–520; and Wilkinson, *Archaeological Landscapes of the Near East*.
- 6 Arlene Miller Rosen, *Cities of Clay: The Geoarchaeology of Tells* (Chicago: University of Chicago Press, 1986).
- 7 For reviews of Mesopotamian prehistory and its Early Bronze Age, see Peter M. M. G. Akkermans and Glenn Schwartz, *The Archaeology of Syria: From Complex Hunter-Gatherers to Early Urban Societies (ca. 16,000–300 BC)* (Cambridge: Cambridge University Press, 2003); and Susan Pollock, *Ancient Mesopotamia: The Eden That Never Was* (Cambridge: Cambridge University Press, 1999).
- 8 See, for example, Mario Liverani, *Uruk: The First City*, trans. Zainab Bahrani and Marc Van de Mieroop (London: Equinox, 2006); and Roger Matthews, "Peoples and Complex Societies of Ancient Southwest Asia," in *The Human Past: World Prehistory and the Development of Human Societies*, ed. Chris Scarre (London: Thames and Hudson, 2009), 432–71.
- 9 For reviews of settlement pattern studies, see T. J. Wilkinson, "Regional Approaches to Mesopotamian Archaeology: The Contribution of Archaeological Surveys," *Journal of Archaeological Research* 8, no. 3 (2000):219–67; and Jason A. Ur, "Patterns of Settlement in Sumer and Akkad," in *The Sumerian World*, ed. Harriet Crawford (Oxford: Routledge, 2013), 131–55.
- 10 Smith, "V. Gordon Childe and the Urban Revolution."
- 11 Cowgill, "Origins and Development of Urbanism."
- 12 Todd Whitelaw, "Collecting Cities: Some Problems and Prospects," in *Archaeological Survey and the City*, ed. Paul Johnson and Martin Millett (Oxford: Oxbow, 2013), 70–106.
- 13 For the Near East, see Jesse Casana, Jackson Cothren, and Tuna Kalayci, "Swords into Ploughshares: Archaeological Applications of CORONA Satellite Imagery in the Near East," *Internet Archaeology* 32, no. 2 (2012), <http://intarch.ac.uk/journal/issue32/2/>; Martin J. F. Fowler, "Declassified Intelligence Satellite Photographs," in *Archaeology from Historical Aerial and Satellite Archives*, ed. William S. Hanson and Ioana A. Oltean (New York: Springer, 2013), 47–66; Jason A. Ur, "Corona Satellite Imagery and Ancient Near Eastern Landscapes," in *Mapping Archaeological Landscapes from Space: In Observance of the 40th Anniversary of the World Heritage Convention*, ed. Douglas C. Comer and Michael J. Harrower (New York: Springer, 2013), 19–29; and Emily L. Hammer and Jason A. Ur, "Near Eastern Landscapes and Declassified U2 Aerial Imagery," *Advances in Archaeological Practice* 7, no. 2 (2019):107–26.

- 14 Surface collection and soundings are reported in Jason A. Ur, *Urbanism and Cultural Landscapes in Northeastern Syria: The Tell Hamoukar Survey, 1999–2001*, Oriental Institute Publications 137 (Chicago: Oriental Institute of the University of Chicago, 2010); and Salam Al Quntar, Lamya Khalidi, and Jason A. Ur, “Proto-Urbanism in the Late 5th Millennium BC: Survey and Excavations at Khirbat Al-Fakhar/Hamoukar, Northeast Syria,” *Paléorient* 37, no. 2 (2011):151–75.
- 15 The best review of this practice remains J. Nicholas Postgate, “How Many Sumerians Per Hectare? Probing the Anatomy of an Early City,” *Cambridge Archaeological Journal* 4 (1994):47–65.
- 16 Lamya Khalidi and Bernard Gratuze, “Late Chalcolithic Lithic Assemblage at Tell Hamoukar’s Southern Extension,” *Berytus* 53–54 (2010–11):15–38; and Lamya Khalidi, Bernard Gratuze, and Sophie Boucetta, “Provenance of Obsidian Excavated from Late Chalcolithic Levels at the Sites of Tell Hamoukar and Tell Brak, Syria,” *Archaeometry* 51, no. 6 (2009):879–93.
- 17 See, for example, Tepe Gawra in northern Iraq: Mitchell S. Rothman, “Tepe Gawra: Chronology and Socio-Economic Change in the Foothills of Northern Iraq in the Era of State Formation,” in *Artefacts of Complexity: Tracking the Uruk in the Near East*, ed. J. Nicholas Postgate (Warminster: British School of Archaeology in Iraq, 2002), 49–77.
- 18 On the Trypillia sites, see Francesco Menotti and Aleksey G. Korvin-Piotrovskiy, eds., *The Tripolye Culture Giant-Settlements in Ukraine: Formation, Development, and Decline* (Oxford: Oxbow, 2012); and Johannes Müller, Knut Rassmann, and Mykhailo Videiko, eds., *Trypillia Mega-Sites and European Prehistory, 4100–3400 BCE* (Abingdon: Routledge, 2016). For a broader discussion of “megasites” and their implications for archaeological approaches to early urbanism, see Bissierka Gaydarska, “The City Is Dead! Long Live the City!,” *Norwegian Archaeological Review* 49, no. 1 (2016):40–57; and Roland Fletcher, “Anomalous Giants: Category Problems and Trajectory Analysis” (forthcoming).
- 19 Jason A. Ur, Philip Karsgaard, and Joan Oates, “Urban Development in the Ancient Near East,” *Science* 317, no. 5842 (2007):1188; and Jason A. Ur, Philip Karsgaard, and Joan Oates, “The Spatial Dimensions of Early Mesopotamian Urbanism: The Tell Brak Suburban Survey, 2003–2006,” *Iraq* 73 (2011):1–19.
- 20 Ur, Karsgaard, and Oates, “Spatial Dimensions of Early Mesopotamian Urbanism.”
- 21 Ur, Karsgaard, and Oates, “Spatial Dimensions of Early Mesopotamian Urbanism.”
- 22 Geoff Emberling, “Political Control in an Early State: The Eye Temple and the Uruk Expansion in Northern Mesopotamia,” in *Of Pots and Plans: Papers on the Archaeology and History of Mesopotamia and Syria Presented to David Oates in Honour of His 75th Birthday*, ed. Lamia al-Gailani Werr, John Curtis, Harriet Martin, Augusta McMahon, and Julian Reade (London: Nabu Publications, 2002), 82–90; and Augusta McMahon, “Early Urbanism in Northern Mesopotamia,” *Journal of Archaeological Research* (forthcoming).
- 23 Augusta McMahon, Arkadiusz Sołtysiak, and Jill Weber, “Late Chalcolithic Mass Graves at Tell Brak, Syria, and Violent Conflict during the Growth of Early City-States,” *Journal of Field Archaeology* 36, no. 3 (2011):201–20.
- 24 See, for example, Heinrich Lenzen, “Die Architektur in Eanna in Der Uruk Iv Periode,” *Iraq* 36, no. 1–2 (1974):111–28.
- 25 For a discussion, see Jason A. Ur, “Households and the Emergence of Cities in Ancient Mesopotamia,” *Cambridge Archaeological Journal* 24, no. 2 (2014):249–68.
- 26 Well documented by intensive surface survey, see Uwe Finkbeiner, ed., *Uruk Kampagne 35–37 1982–1984: Die Archäologische Oberflächenuntersuchung (Survey)*, Ausgrabungen in Uruk-Warka Endberichte Band 4 (Mainz: Philipp von Zabern, 1991).
- 27 Reviewed in Elizabeth C. Stone, “The Mesopotamian Urban Experience,” in *Settlement and Society: Essays Dedicated to Robert McCormick Adams*, ed. Elizabeth C. Stone (Los Angeles: Cotsen Institute of Archaeology, 2007), 213–34; Elizabeth C. Stone, “The Organisation of a Sumerian Town: The Physical Remains of Ancient Social Systems,” in Crawford, *Sumerian World*, 156–78; and Jason A. Ur, “Southern Mesopotamia,” in *A Companion to the Archaeology of the Ancient Near East*, ed. Daniel T. Potts (Malden: Blackwell, 2012), 533–55.
- 28 Recent reviews of northern Mesopotamian cities of the Early Bronze Age include Andrew T. Creekmore III, “The Social Production of Space in Third-Millennium Cities of Upper Mesopotamia,” in *Making Ancient Cities: Space and Place in Early Urban Societies*, ed. Andrew T. Creekmore III and Kevin D. Fisher (New York: Cambridge University Press, 2014), 32–73; Jason A. Ur, “Cycles

- of Civilization in Northern Mesopotamia, 4400–2000 BC,” *Journal of Archaeological Research* 18, no. 4 (2010):387–431; Timothy Matney, “Northern Mesopotamia,” in Potts, *Companion to the Archaeology of the Ancient Near East*, 556–74; and Augusta McMahon, “North Mesopotamia in the Third Millennium BC,” in Crawford, *Sumerian World*, 462–77.
- 29 This model is elaborated in Dan Lawrence and T. J. Wilkinson, “Hubs and Upstarts: Pathways to Urbanism in the Northern Fertile Crescent,” *Antiquity* 89, no. 344 (2015):328–44; and Jason A. Ur, “Central Planning and Urban Emergence in Early Bronze Age Cities of Northern Mesopotamia,” in *New Agendas in Remote Sensing and Landscape Archaeology in the Near East: Studies in Honor of T. J. Wilkinson*, ed. Dan Lawrence, Mark Altaweel, and Graham Philip (Chicago: Oriental Institute of the University of Chicago, forthcoming).
 - 30 For an argument in favor of neighborhood planning, see Timothy Matney, Guillermo Algaze, Steven Rosen, Sumru Aricanli, and Britt Hartenberger, “Early Bronze Age Urban Structure at Titriş Höyük in Southeastern Turkey: The 1998 Season,” *Anatolica* 25 (1999):185–201.
 - 31 Jan-Waalke Meyer, “Town Planning in 3rd Millennium Tell Chuera,” in *Power and Architecture: Monumental Public Architecture in the Bronze Age Near East and Aegean*, ed. Joachim Bretschneider, Jan Driessen, and Karel van Lerberghe (Leuven: Peeters, 2007), 129–42.
 - 32 For a review of “hollow way” tracks in Mesopotamian archaeology, see Wilkinson, *Archaeological Landscapes of the Near East*. On the use of CORONA satellite photography to map “hollow ways,” see Jason A. Ur, “CORONA Satellite Photography and Ancient Road Networks: A Northern Mesopotamian Case Study,” *Antiquity* 77 (2003):102–15; and Ur, *Urbanism and Cultural Landscapes in Northeastern Syria*.
 - 33 This emergent argument for Early Bronze Age urban growth is described in detail in Ur, “Central Planning and Urban Emergence in Early Bronze Age Cities of Northern Mesopotamia.”
 - 34 Spiro Kostof, *The City Shaped: Urban Patterns and Meanings through History* (London: Thames and Hudson, 1991).
 - 35 For a thoughtful review of bottom-up versus top-down processes in Early Bronze Age cities, see Creekmore, “Social Production of Space in Third-Millennium Cities of Upper Mesopotamia.”
 - 36 Increasingly, the divergence between the rhetoric of royal claims and political reality in early Mesopotamia is being acknowledged; see especially Seth Richardson, “Early Mesopotamian History: The Presumptive State,” *Past and Present* 215 (2012):3–49; and Seth Richardson, “Before Things Worked: A ‘Low Power’ Model of Early Mesopotamia,” in *Ancient States and Infrastructural Power: Europe, Asia, and America*, ed. Clifford Ando and Seth Richardson (Philadelphia: University of Pennsylvania, 2017), 17–62. On the Neo-Assyrian engineered landscape of the first millennium BCE, see Daniele Morandi Bonacossi, “The Creation of the Assyrian Heartland: New Data from the ‘Land Behind Nineveh,’” in *The Archaeology of Imperial Landscapes: A Comparative Study of Empires in the Ancient Near East and Mediterranean World*, ed. Bleda Düring and Tessa D. Stek (Cambridge: Cambridge University Press, 2018), 48–85; and Jason A. Ur, “Physical and Cultural Landscapes of Assyria,” in *Blackwell Companion to Assyria*, ed. Eckart Frahm (Oxford: Wiley Blackwell, 2017), 13–35.